

THE  
ARCHITECT  
& BUILDING NEWS

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MARCH 9, 1951 • VOL. 199 • NO. 4290 • ONE SHILLING WEEKLY

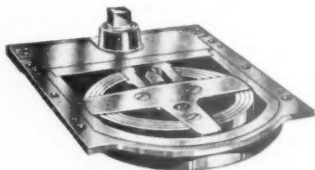


A fine Renaissance door in Broughton Castle

## THE *Britannic*

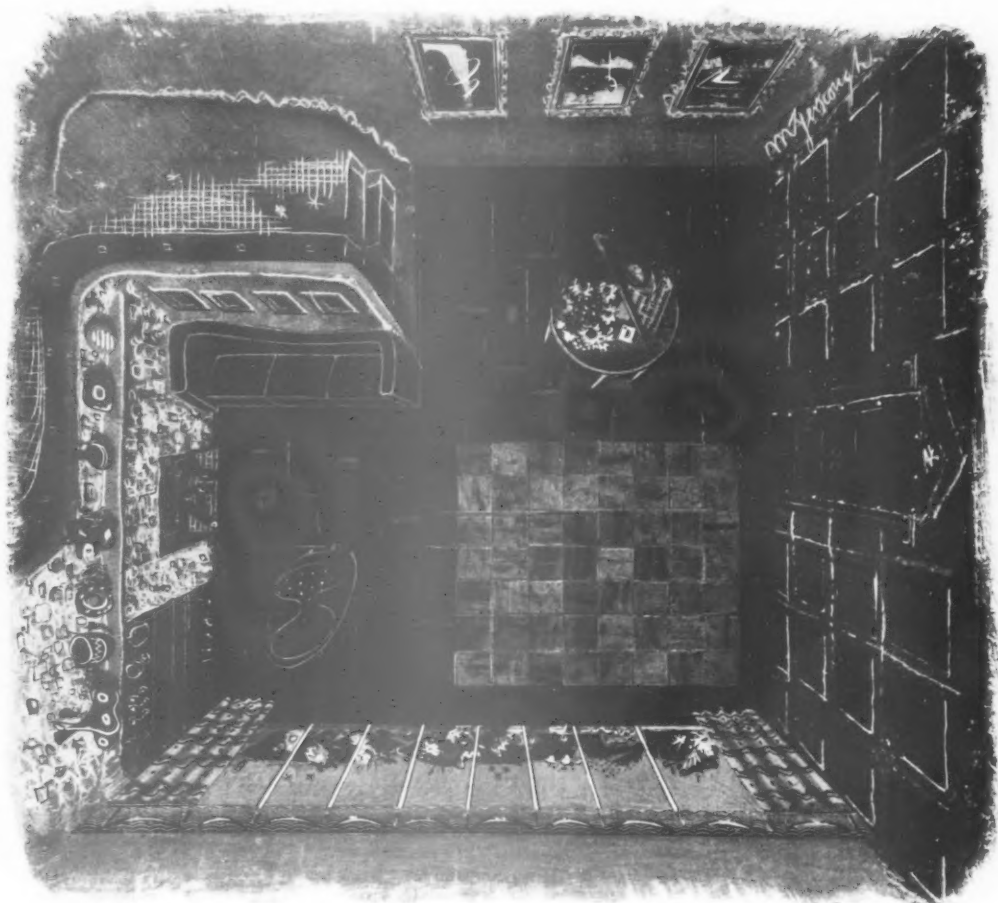
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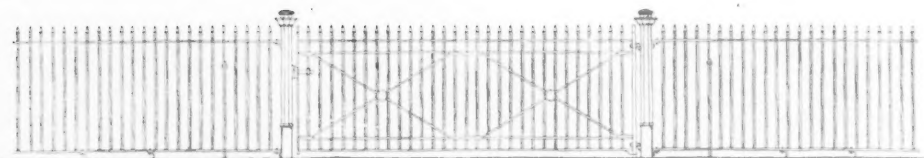
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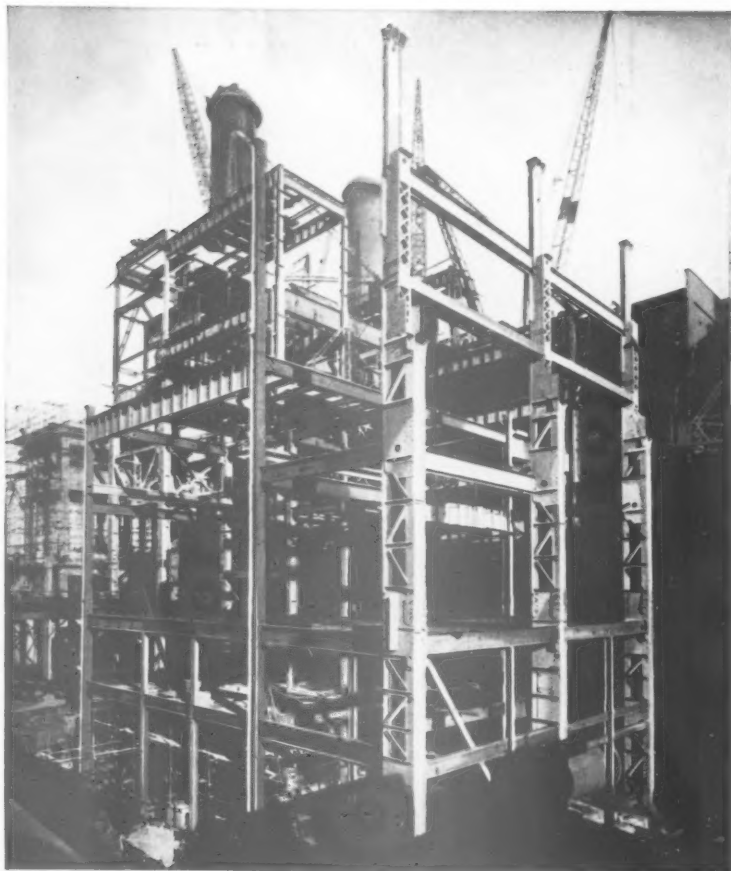


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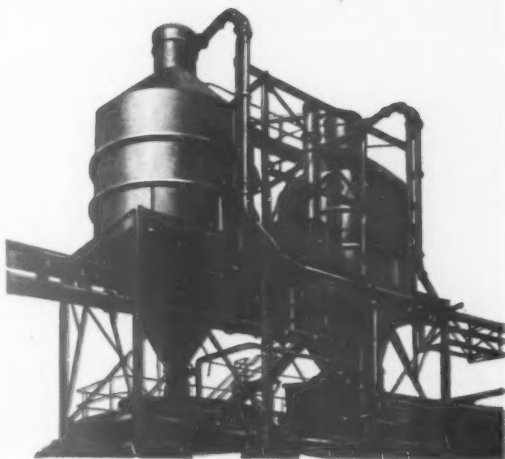
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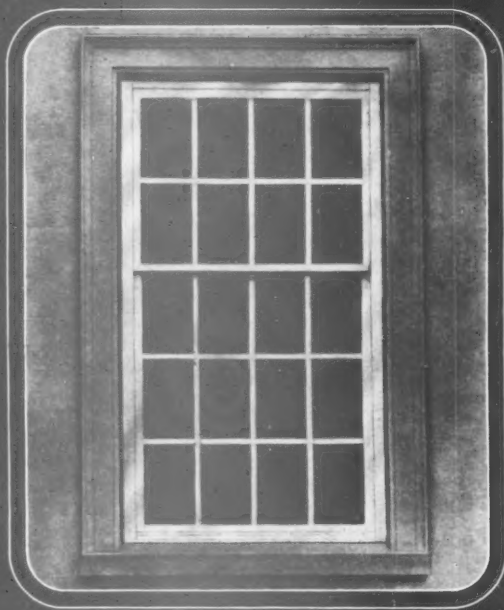
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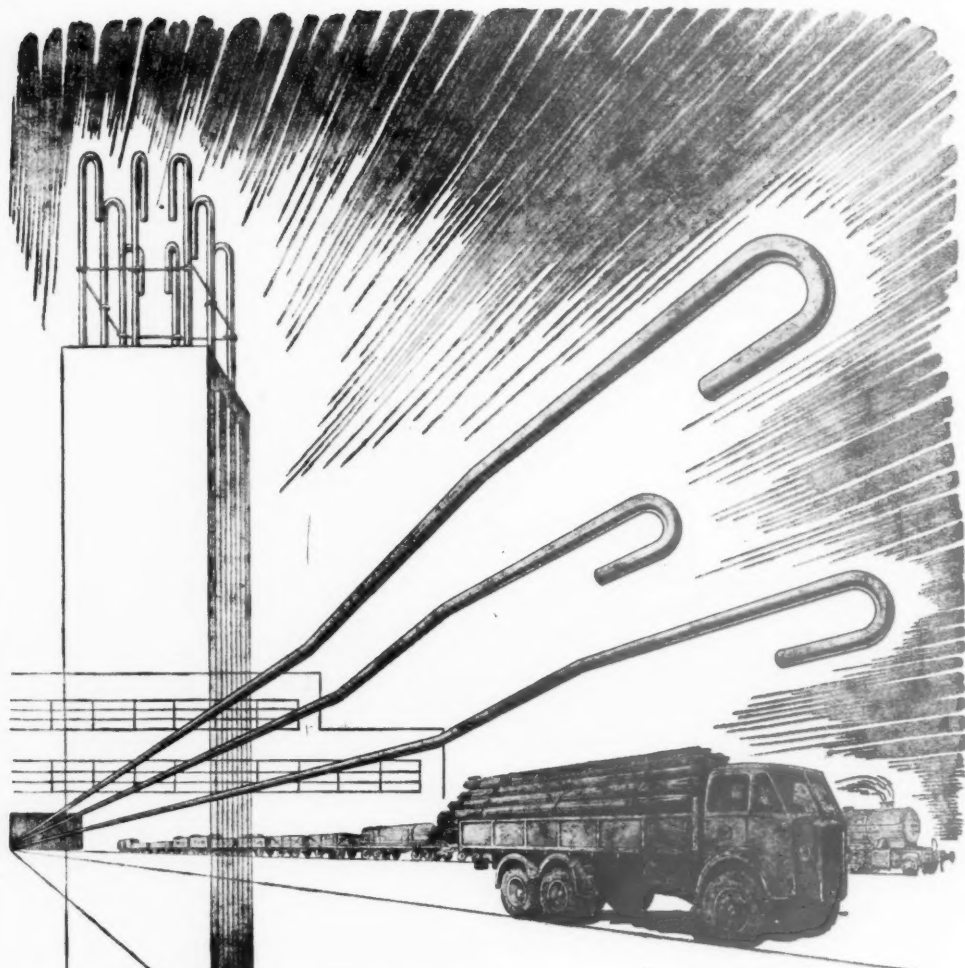
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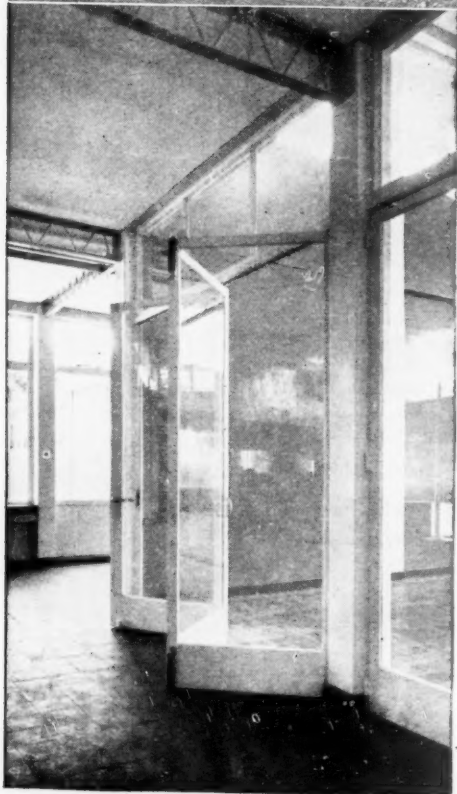
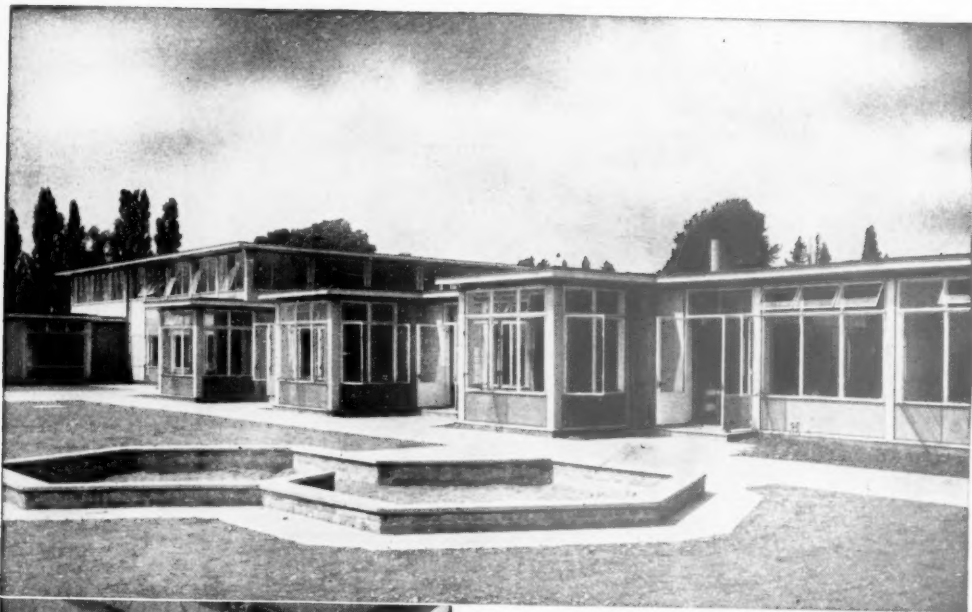
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## Hertfordshire's production line schools

*The schools produced for the ambitious Education Programme of the Hertford County Council are partially pre-fabricated for easy, swift erection; identical component units being used in each school. The parts are congregated in a store adjacent to the proposed site of the school and then erected in one continuous operation by a building contractor. This means that all the sub-contractors have to ensure that their drawing offices design their particular component parts so that they can assemble them with a minimum of trouble. Although the same type of parts are used in each school, no two schools are alike. On the drawing board the architects worked out a series of component parts that could be assembled in different forms. This made for simplicity and economy of construction and also eliminated the possible monotony of a series of schools of the same design. As a Williams & Williams man on the site said, "Each school is a very ingenious jig-saw puzzle."*

The windows designed for the Junior Mixed School at Morgan Road, Hertford, were no exception. Working closely in co-operation with the county architect, Williams & Williams helped to produce a school which is pleasing in appearance, and a joy to teach, and be taught in.

County Architect—C. H. ASLIN, F.R.I.B.A., County Hall, Hertford.

Contractor—MESSRS. EGIN & COMPANY, Great Northern Works, Hertford.

**The windows**

The windows were of aluminium, alocrumed and painted. They were standardised to suit an 8' 3" module, which was used throughout this school, and other schools in the scheme. From the sill to the ground Williams & Williams prefabricated panels insulated with fibre-glass and sheathed in aluminium. When used in the classrooms these windows have three horizontal centre-hung casements over three side-hung casements (see top right).

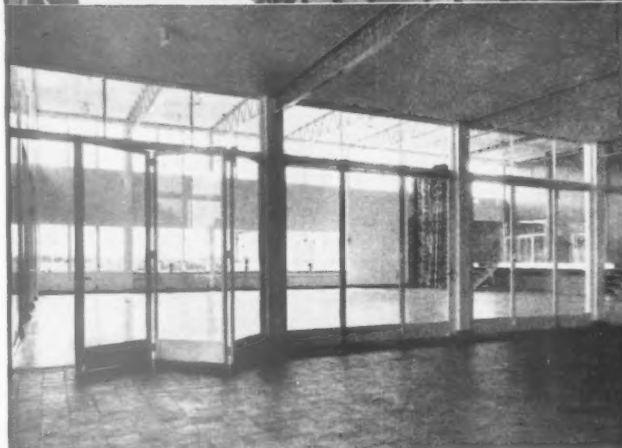
**Internal Bays**

The internal glazed partitions of the school hall (see middle right) are of steel and aluminium and were designed so that they could be drawn back to provide greater floor space when required. For this Williams & Williams provided a series of three leaf sliding doors, the third leaf being loose but controlled by a castor in the toe (see bottom left).

Glass partitions of this type were used to localise the dining space from the entrance hall. The use of glass gave the maximum of light to the dining room when in use by the children (see bottom right).

**External Doors**

The external doors were of double side hung casement type fitted with friction stays to control the opening to an agreed limit. Tubular pull handles were fitted, also push discs in red doverite.



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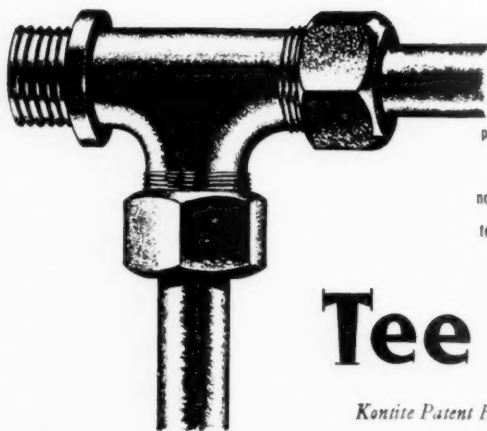
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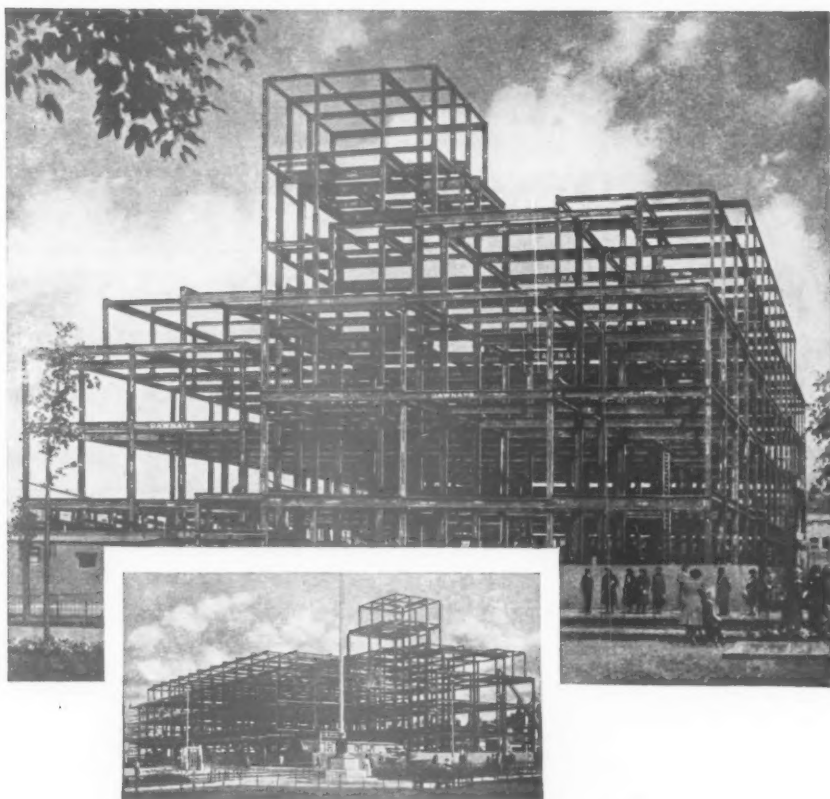
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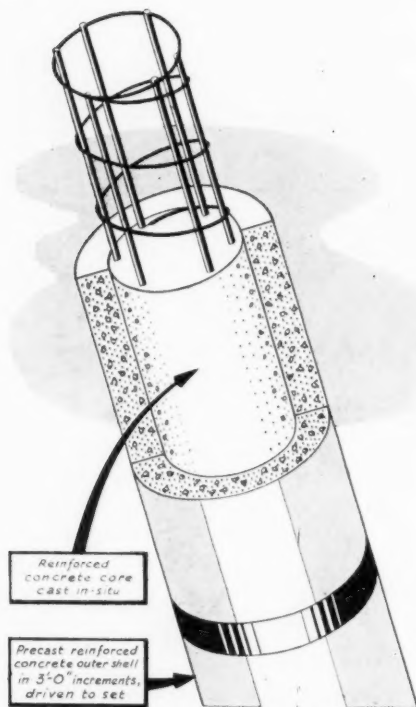


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## THE ARCHITECTURE OF HUMANISM

THE R.I.B.A. was honoured and mightily interested in the paper on the United Nations Building by Mr. Wallace K. Harrison, the executant architect for the New York project—called the "Director of Planning". He not only gave the large audience something to think about in the way of large-scale organisation, with a view of the many problems in the realisation of the Headquarters, but he became almost philosophical and gave us some insight into his own personality and into that of his more humanistically-inclined countrymen.

The rather terrifying honeycomb of a building which has so far arisen from all the thought and planning is only the first unit of the whole scheme—the working office of U.N.—the Secretariat. It is a little strange perhaps to have to express doubts as to the extent to which humanism is expressed in such a structure.

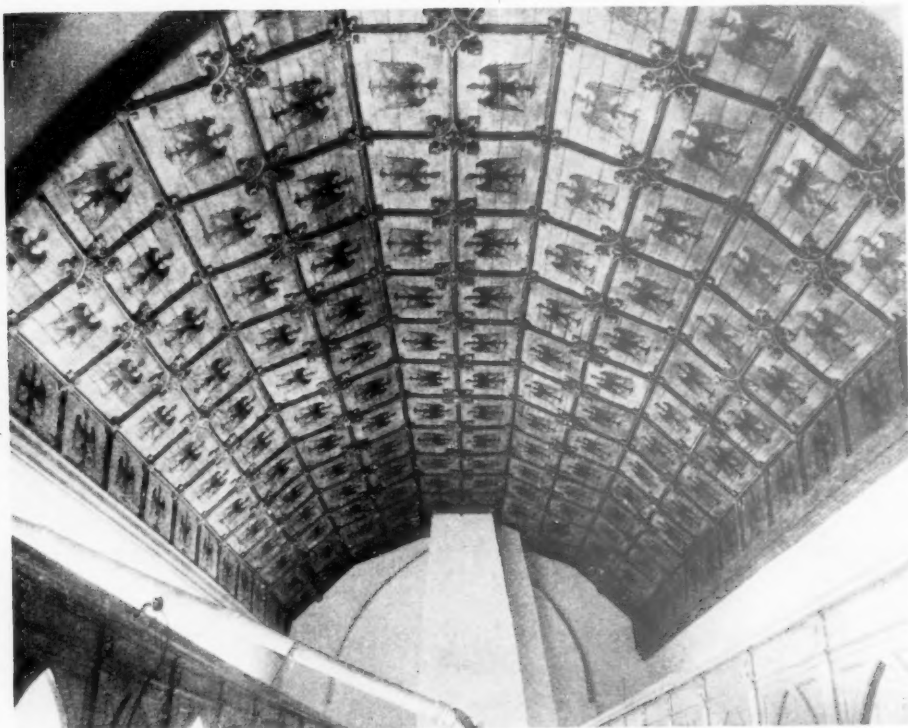
The population of 4,400, equal to a small town, which is to be housed in its cells (rectangular—not hexagonal) have, we are told, been treated well; there are all the common office amenities and then some extra space and quality as well.

Mr. Harrison's emphasis, in summary, was on "Man". "We must know man... the study of architecture is the study of man". The engineer might similarly approach problems, yet get no further with his humanism. "The study of pumps is the study of liquids—we must know hydrostatics". This massing of the human spirit into a thing called "man"

can become a dangerous sort of philosophical indulgence unless it is carefully watched. It can run away into the realms of the inhumanism of totalitarianism without much stretching of the imagination. The personal and humble soul-searching approach of Mr. Harrison certainly eliminated this possibility from his own thoughts, but it is not quite possible for us to forget that those 4,400 U.N. Secretariat people are each one a man or a woman. In fact Mr. Harrison admitted that the fact worried him at some broader level than that of his present problems—"we must approach architecture simply, without fear, without price and with faith in the human being... I believe there are three essential parts of architecture: human, national and technological". (*Pace! Alberti—pace! Isaac Ware.*)

The fact is that what really matters in architecture and in any sort of design are the relationships between the factors of the programme as much, if not more, than the factors themselves. It is man's relationship to man—each man and each woman to his or her contemporaries—the relationships (and their resultants) of the "human, national and technological" parts of architecture that matter to architects.

The approach can be neither "idealistic" nor "materialistic"; these are, like science and art, interdependent and their interactions must, and inevitably will, determine the results. Mr. Harrison deplored the boring similarity of the repetitive utilitarianism of many housing and other schemes of to-day. Are they



Renovations to the roof of the Eagle Ward of the Great Hospital at Norwich with its fine medieval ceiling decorated with 245 eagles in full colour has just been completed. This work was made possible through a gift from the Pilgrim Trust. The Eagle Ward was built by Bishop Spencer in 1383, as the Chancel of St. Helen's Church. According to tradition the eagle was in honour of Anne of Bohemia who visited Norwich for the opening of the Chancel with her husband Richard II. Internally all the new work has been coloured to match the original. The work has been done under the direction of Mr. Stanley J. Wearing, Consultant Architect for the Trustees and carried out by Messrs. W. Lusher & Sons Ltd. Mr. Tom Griffiths supervised the painting.

not the result of the non-realisation of the relationships, the deliberate setting-aside of some of the factors? "Man" is not just one entity to be designed for or to be planned; humanism is not concerned with one bulk thing only—called, for better or worse, humanity. It is here that architecture, if it still exists and is to continue to develop for the service and for the pleasure of men and women, is fundamentally different from the all-too sectional activities that have dogged its steps and even led it astray during the last few decades. In this period it has revolted against and developed away from the sordid parts of the past—the pastiche of tradition—but at the same time it has hitched its wagon to some very doubtful stars and, what is more, has given names to them to prove its self-accredited rightness—functionalism, cubism, technics, existentialism. How soon, in the history of humanism, do these things get thrust aside, leaving their little contributions to a common develop-

ment. One-sidedness will not keep "neo-chaos" at bay.

We must thank Mr. Harrison for coming over here and making us think. Looked at in one way, of course, he has been presenting an interim statement to one of his Clients—we congratulate him on his Progress Report. He, having done so, leaves us with the building he has called "Man's Workshop of Peace", to look at and to comment upon. How we could wish that it was more "human"; how we could wish that it was more isolated and not backed-up by a town-scape of so many other experiments in the worst type of experimental sky-scraping. What a symbol it could be—in its present form and shape—without the flanking rivalry of Woolworth and Empire State towers.

It is exactly here, perhaps, that something has gone slightly awry—in the interaction and relationships of two of the factors—the symbolism of humanism and the humanism of symbolism.

# EVENTS AND COMMENTS

## R.I.B.A. RECEPTION

THE Annual Reception of the R.I.B.A. will be held on May 18. I suppose that it is too much to hope that a bar of some kind will be available. It is usually a good party but somewhat of an endurance test on cider cup and small beer.

## THE GAS COUNCIL AND THE IDEAL HOME

THE Gas Council held its usual Ideal Home Exhibition Stand preview last week. Most of those important in the gas world were there and a large number of others as well. The theme "Spring in the Air" with plaster squirrels and stuffed chicks will almost certainly ring the bell at Olympia, where over half-a-million people last year saw the impact of gas on "Treasure Island." An innovation this year will be a real live gas-fitter to answer the questions of the practically minded. After a week or two at Olympia I imagine that he will find gas-fitting a soothing relaxation.

## THE BUILDER COMPETITION

THE Editor asked Edwin Gunn for his comments on the Builder Competition; here they are, full of the commonsense of long experience:

"(i) The interior planning strikes me as too complex and 'clever.' Not all the quantity surveyors will persuade me that, with ordinary building labour, designs which build easily do not score heavily every time. I learnt that lesson by bitter experience working for the Ministry of Agriculture.

"(ii) There is danger in specialised accommodation. Tenants won't co-operate. Sir Laurence Weaver tried to make smallholders use their good living rooms by reducing sculleries and crowding them with fittings and doors, but often the tenants preferred to live in them! I wouldn't be surprised if the 'children's den' were so used to neglect of better rooms. I have a recent case in point; tenants of some of my houses apparently prefer kitchenette (with oven or back to back cooker) to living room with fire.

"(iii) It amused me to see first-floor joists spanning back to front and side to side *each* claimed as being a good thing.

"(iv) I still think that every architect should take a course in bed-making."

Did you hear the housewife's comment on the State-aided house now being built in a recent radio programme. She said that she found it very difficult to get used to the large rooms.



## THE MOYPOWELL

THE Vertical Feature or Skylon, as they would have us call it (I notice that "they" call it the Vee-eff among themselves) is really going up and already looks most impressive. The designers' suggested method of construction is not being followed. Instead of starting at the top and hoisting it as they went along, they have started at the bottom and are working up in the traditional manner of building things. I hear extraordinary stories of the black-bearded, stocking-capped, commando-type persons who are doing the job, and I have arranged to go and see them at work next week. When I saw it from the other side of the river on Friday it was nearly up to the half-way mark.

## LURIFUGE

NOT a "sister for Lalage" but a new fire-resisting paint. Obtainable in colour or "incolour"—which, strangely enough, means colourless—this material can be applied to all combustible materials and all metals. Lurifuge is being used on air and shipping lines and has been recommended for use at the Festival of Britain by the Festival Safety Precautions Officer. I was sent a piece of paper, half of which had been dipped in Lurifuge aluminium. I lit the undipped half and it burned normally; when the flame reached the paint it went out but a red-hot edge continued to move across the paper, charring it rather like magic fern paper found in crackers. Fairly considerable claims are made for Lurifuge, which may be the answer to a lot of fire risk troubles.

## MARLOW BRIDGE

SOME time ago I pointed out that in spite of temporary repairs, Marlow suspension bridge over the Thames was still in considerable danger. I have now



Red Hill Tunnels, Trent. One of the new L.M.S. pictures referred to below.

heard that the committee considering the problem is urging the demolition of the bridge because of the difficulty and expense of strengthening it. The committee is said to be pressing for the construction of a new bridge as a matter of great urgency. If it is indeed impractical to strengthen the existing bridge to take more than the present permitted load of two tons, it would not be very sensible to preserve it. It is to be hoped, however, that the committee has taken the best advice available before coming to its reported decision. If a new bridge is to be constructed, it is hardly likely to be of the same type. What then? The recent competition for a road bridge organised by the Cement and Concrete Association showed clearly that although architects and engineers in collaboration produce better bridges than engineers working alone, there are apparently no Robert Maillarts in this country. If the design of the bridge is left to chance we shall have one more thoroughly undistinguished crossing of the Thames: a river which deserves better treatment than it has received from bridge designers in the last hundred years. Would the C. and C.A. consider another competition open to architects and engineers working together?

#### TO LET

**WOULD** you be interested in renting Kelmscot Manor, the home of William Morris? The house is to let at £200 a year including rates. The lease is for seven years and anyone taking the house must be prepared to show visitors round and tell them about the Morris treasures.

#### RAILWAY DESIGN

**I** AM still hoping for some sort of design standard to be laid down by British Railways. So far there seems to be none. I mentioned the schemes for country stations on the G.W.R. last week. These are in strong contrast to the standard of the new booking hall at Victoria. Now the L.M.S. is proposing to decorate its compartments with very indifferent coloured pictures. I notice that the only comment which the press officer offers on this venture is that the cost of the pictures is less than half that of the photographs which they replace. This seems to be a bad excuse. I like photographs in railway compartments. I like them to be out of date. Indeed, I have particular favourites, one of which shows the beach at Penzance with a picnic party all dressed in Sunday best, of long

ago, sitting by a tent with their backs to the sea while little Tommy, having a quiet bathe, is in dire danger of being swept away with no one any the wiser.

Talking of design, did you notice the stained glass laylight in page 270 last week? Was it not a beauty? Not gas, this time, but electricity.

#### MASS OBSERVATION AND DESIGN

**MASS** Observation and Mr. Gallup—I feel sure that they are anathema to each other, unless they are the same thing—always make me feel uncomfortable.

Reading Mass Observation's booklet on Design, it seems to me that a vast amount of work has gone into producing not very much. If you ask 250 people a lot of questions on the same subject, their assembled answers can be made to mean practically anything. Mass Observation being, I imagine, an honest and well-meaning organisation, tries hard to interpret truthfully the wishes of the masses on clocks, tea cups and other things. The result is much as any sensible person would have predicted—the objects offered for choice were all considered to be of good design by the C.o.I.D.—the plain, the simple, and above all the familiar, were chosen. The choosers played safe and sheered off anything decorated or unfamiliar. The booklet goes much deeper than I am prepared to here, and analyses it all up, down, and across as if determined not to be caught out by anyone.

#### CODES OF PRACTICE

**THE** fourth report of the Codes of Practice Council, for the years 1947-9, has now been published. Most of it is taken up with the names of members of committees; in fact there are only seven and a quarter pages of report in a document of 48 pages and costing 1s. Who, I wonder, is interested in these lists of names? The Council's programme allows for the production of 10 Chapters of the Code of Functional Requirements for Buildings and 224 General Series Codes. Of these, up to the end of 1949, 45 had been issued in final form and 148 in draft form for comment. The report stresses the vast amount of work necessary to produce a code and praises the staying power of its committees—the publication of whose names is their only reward. I hope some arrangement is being made to keep the codes already published up to date.

ABNER

# NEWS OF THE WEEK

## First Report on Modular Co-ordination (B.S.1708 : 1951)

The British Standards Institution has published the First Report of a committee under the Chairmanship of S. Rowland Pierce, F.R.I.B.A., on Modular Co-ordination. The committee formed the opinion that the adoption of modular co-ordination would have many advantages and should contribute to a reduction of the overall cost of building. It is also maintained that the use of a guiding modular framework, besides assisting design and planning on the drawing-board, would considerably help site work and the prefabrication of components. Eventually a modular system, if adopted, would become the basic common reference for the co-ordination of size-standards for all building materials and components or for the setting up of new standards. After examination of possible disadvantages the committee concluded that the introduction of modular co-ordination would not impose undue restrictions on the designer nor would it lead to stereotyped buildings if the modular units are correctly chosen and used.

The committee has now reached a stage when a very considerable amount of work, both on paper and in the form of practical experiments, will be needed in order to proceed further; it has been thought desirable, therefore, to inform the building industry of the conclusions so far reached and to obtain reactions and comments which may assist the continuation of the work.

The committee wishes to point out that, at the moment, it is not in the position to inform manufacturers of precise dimensions to which materials or components should be produced to fit the suggested modules. To reach such precision involves a major task with detailed examination of existing standards for each component and material and it is thought wise, at this stage, to obtain wider views on the proposals as a whole before embarking on costly investigations covering such wide fields.

Copies of the First Report on Modular Co-ordination (B.S.1708) are obtainable from the British Standards Institution, Sales Department, 24 Victoria Street, London, S.W.1, price 2s. 6d. post free.

## V. & A. Rearrangement

The Victoria and Albert Museum has completed the rearrangement of a further seventeen rooms, which are now open to the public. This is another important step in the post-war rehabilitation of the Museum.

Rooms 26-29a and 11-21 form part of the Museum's Primary Collections, in which the finest works of art in all mediums are shown together in a consecutive series illustrating the history of style. These seventeen rooms fill the gap between the Gothic galleries, on the one hand, and the galleries of 17th century Continental Art and Tudor and Stuart Art on the other, which are already complete.

The newly arranged galleries comprise (i) Rooms 26, 29 and 29a devoted to late Gothic and Early Renaissance art in this country, France, the Netherlands and Spain; (ii) Rooms 27 and 28, devoted principally to late Gothic and Renaissance art in Germany; (iii) Rooms 11-20 devoted to the art of the Italian Renaissance; and (iv) Rooms 21 and 21a devoted to Continental art in the 16th century.

The exhibits in the newly arranged rooms are superbly shown and lighted. Gloom and overcrowding have been entirely banished.

To mention three exhibits among so many that made the visit on Tuesday such a pleasure were the bust of Giovanni Chellini in marble (Room 15); the majolica pavement for its wonderful colours (Room 14) and the painted ceiling from Cremona (Room 17).

Colonel Harold C. Smith, C.B.E., D.L.J.P., Deputy Chairman of the Gas Council, said at the preview of the Gas Industry's exhibit at the Ideal Home Exhibition, Olympia—"Spring is in the air", on March 2.

"On the Gas Pavilion at Olympia you will find a representative display of the latest gas and coke appliances designed to save work and increase comfort in the home and to bring greater cleanliness to the air of our towns.

"But the Gas Industry does not consider that its duty towards its customers ends with the supply of gas or gas-burning equipment. Over 10 million homes—that is 10 out of every 12 homes in Great Britain—have a gas supply. Unfortunately the equipment burning that gas in many of these homes is old-fashioned or faulty and is certainly very wasteful.

"There must be well over 2 million obsolete gas cookers in use in this country to-day. The replacement of these cookers by modern cookers to give the same cooking service would result in a saving of over 700,000 tons of coal per annum.

"It is worth while reminding you that the process of gas-making is in itself an economical way of using the country's coal resources. From every ton of coal used to make gas we produce not only about 75 therms of gas, but also 10 cwt. of coke, 10 gallons of tar, together with benzole, sulphur and sulphate of ammonia."

## School of Planning and Research for Regional Development

Applications are now being considered for the next Diploma Course: Sessions 1951/52/53. All communications should be addressed to the Secretary, School of Planning, 35 Gordon Square, London, W.C.1. EUSTON 2158/9.

## R.I.B.A. Prizes and Studentships Pamphlet

The R.I.B.A. Board of Education announces that the Prizes and Studentships 1951-1952 Pamphlet is now ob-

tainable at the R.I.B.A. The price is 2s. exclusive of postage. It contains full information on the various prizes and studentships and, where applicable, detailed programmes of the competitions.

The Corporation of Edinburgh were asked at their last meeting to approve the appointment of Mr. T. H. Hewitson, A.R.I.B.A., A.M.P.T.I., as Deputy Town Planning Officer.

The method of approach to this appointment was however queried by certain members who asked that the matter be remitted back. It would appear, that Mr. Hewitson was interviewed by the Planning Officer only, and not even by the Provost or any member of the Planning Committee.

The position carries a salary of £1,200 per annum.

Westmorland County Council have agreed to place their County Architect and Planning Officer, Mr. R. H. Crompton, A.R.I.B.A., A.M.P.T.I., on a salary scale of £1,250 rising by annual increments of £50, to £1,450. Having regard to his length of service it was agreed to place him at the top of the scale £1,450, as from April 1.

Mr. J. Wilson Paterson, C.V.O., O.B.E., A.R.I.B.A., Senior Architect in the Ministry of Works and architect in charge of Ancient Monuments and Historic Buildings for Scotland, retired on February 28 after 41 years' service with the Ministry and its predecessor, H.M. Office of Works. At His Majesty's request Mr. Paterson will remain for another year as the King's personal representative for superintending the household staff and caring for Their Majesties' property in the Palace of Holyroodhouse.

## OBITUARY

The death was announced on March 1 of T. Harry Gibbs, F.R.I.B.A., of Wembley.

The death was also announced on March 4 of Horace William Cubitt, F.R.I.B.A., F.R.I.C.S., aged 71 years, of Richmond.

## COMING EVENTS

### The Housing Centre

● March 13, at 1.15 p.m. "Town Plan for Lusaka, Capital of N. Rhodesia." Speaker: G. A. Jellicoe.

### Royal Institute of British Architects

● March 13, at 6 p.m. "Recent Research on Daylighting." Speakers: W. A. Allen and R. G. Hopkinson. Incorporated Institute of British Decorators

● March 13, at 7.30 p.m., at 6 John Adam Street, Strand, W.C.2. "Whitewash Decoration?" Speaker: F. R. Wray.

### Royal Institution of Chartered Surveyors

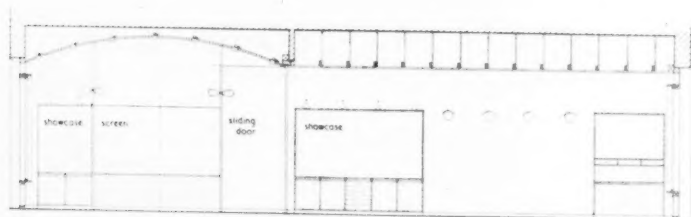
● March 14, at 8 p.m. "Quantity Surveyors' relationships with Clients and Architects." Speaker: H. A. Ackland.

### Institution of Structural Engineers

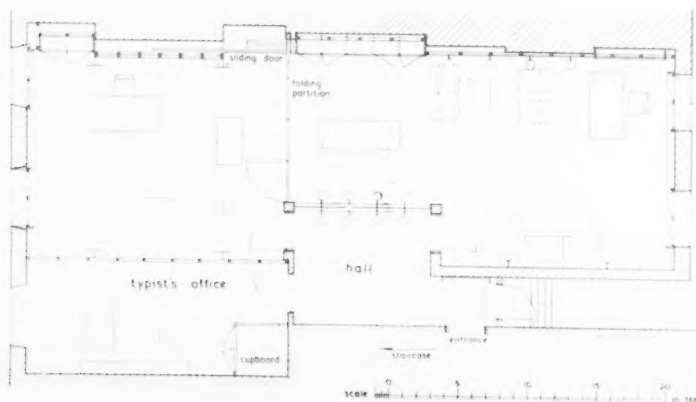
● March 16, at 7 p.m. at College of Technology, Manchester. "Pre-stressed Concrete in Architecture."



SHOWROOM IN SAVILE ROW, W.1



Plan and Section



designed by  
DENNIS  
LENNON  
M.C., A.R.I.B.A.

THE ARCHITECT and Building News,  
March 9, 1951

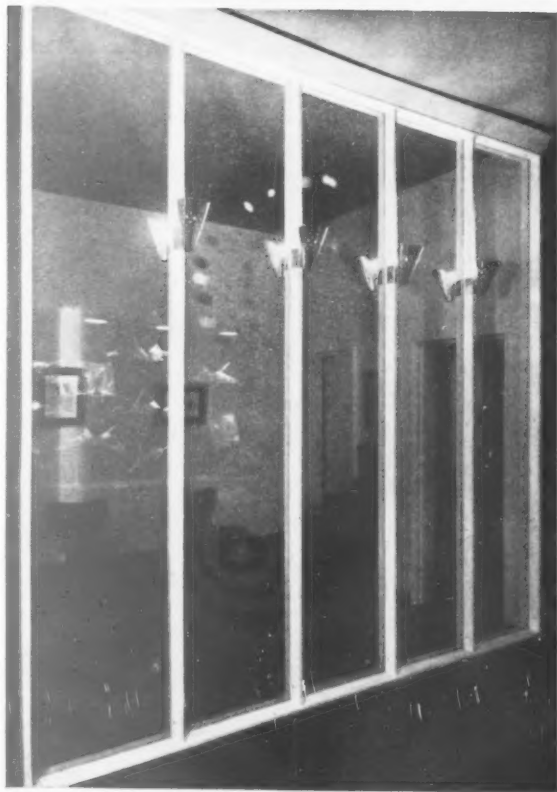
In this view the partition which divides the showroom is seen partly unfolded.

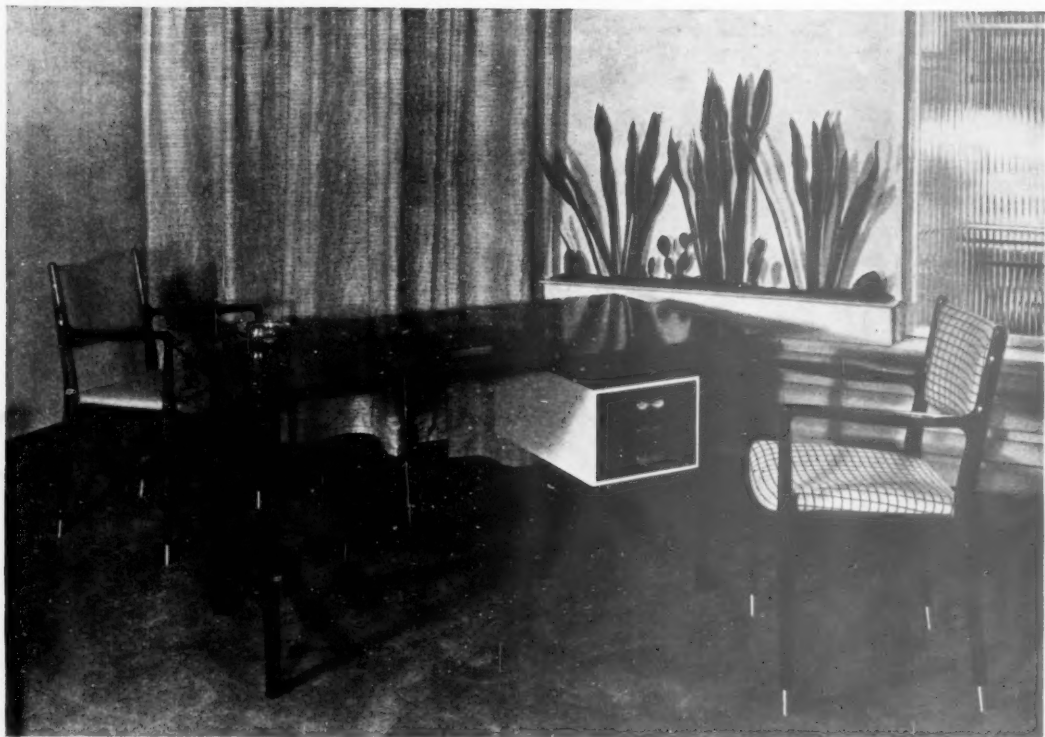


**T**HIS new showroom of Partos (Brassiers) Ltd. was opened recently at No. 11 Savile Row. Maximum use has been made of the limited space available, to provide as large a showroom as possible, typist's office and small waiting hall. A part of the showroom can be divided off by a folding partition to form a private office when required; the folding partition closes back into the wall and is hidden by a sliding door matching the wall.

The colour scheme includes: pale blue ceiling; white windows and window wall; grass papered wall, pale yellow wall and white papered wall with pink polka dots. The carpet is light grey. The upholstery is in various bright colours defining groups of furniture. Light fittings, some of which reproduce the Partos Trade Mark, are of brass. The furniture generally is of dark African mahogany and the Partos Trade Mark is again reproduced in the handles.

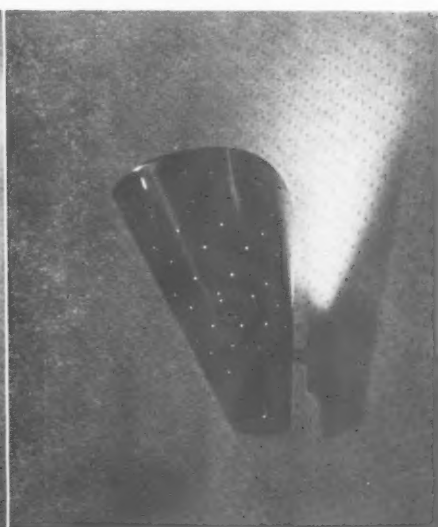
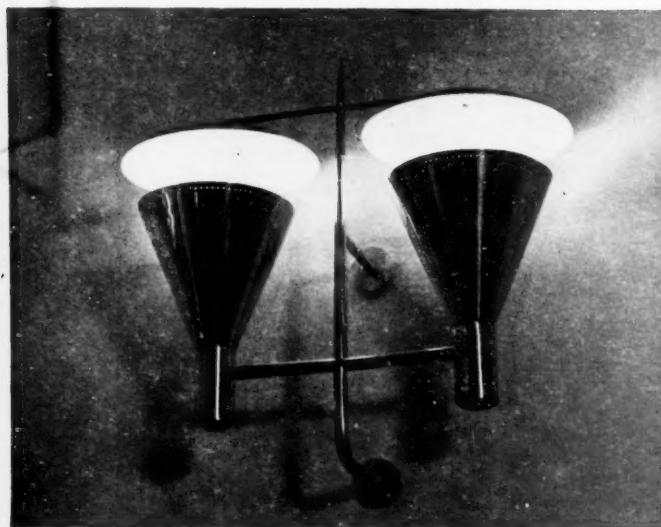
Both furniture and light fittings were designed by the Architect. The General Contractors were David Esdaille & Co. Ltd.





*Chairs and desk in African mahogany and light fittings in brass, designed by Dennis Lennon.*

SHOWROOM IN  
SAVILE ROW



## POINTS FROM PAPERS

## DETAIL IN CIVIC DESIGN

Extracts from a lecture given to the Town Planning Institute by FREDERICK GIBBERD, F.R.I.B.A., M.T.P.I. on March 1. The lecture was illustrated by slides, some of which are reproduced.

OUR towns have become mean and squalid places, and every day we make them more mean and more squalid.

They will continue to grow more mean and more squalid just so long as we neglect the design of the innumerable small objects that go to make the urban scene. What in fact we loosely call the detail design: the street furniture, the advertising, the lettering, the pavings and the host of other things that crowd the urban scene. It is on the design of these details that I have to talk to you. The title given me was "Detail in Civic Design," and I should begin by saying what I think "Civic Design" is, and what I think "Detail" is.

By civic design I mean the design of any part of the urban scene in which aesthetic selection is exercised. It is, therefore, more than the design of civic centres or other important civic groups.

Perhaps the expression "Town Design" is a better one than Civic Design, because it's not just associated with that sort of civic improvement carried out by the last century to salvage its civic conscience.

Civic design or town design is more than town planning, for a town plan can be made—and indeed they are made—without any aesthetic sensibility being exercised at all: a mere matter of determining traffic routes, and zones of building use.

But in town design, the designer must not only make his scene or object work well, he must make it look well—he must exercise his aesthetic sensibility.

The town designer imagines what the urban scene will look like when it is realized, he makes an urban picture; a picture which one can step inside and move around in.

This urban scene is usually a space—a street, a square, or a close—an open-air room in which buildings form the walls, the roads and pavings the floor, and the sky the ceiling.

What are the details in this spatial composition?

One generally thinks of them as the advertising hoardings, lamp posts, telephone kiosks, and other objects that form small details in the picture. But I believe we should take a wider view of them.

"Details are all the objects or surfaces of objects in the urban scene, that are secondary to the main composition."

Imagine an ordinary civic square or a street. The main composition is a space formed by ranging buildings round a road or pavings. The problem is one of the relative proportions between the floor and the walls, and between the walls themselves—the correlation of the architectural forms with each other, and with the floor space in front of them.

All the design problems beyond this main blocking in of the composition are problems of detail design.

Consider the street scene.

The buildings are the walls to the space and the road or pavings the floor. All the other objects: the lamp standard, the traffic signal, the advertising, the walls, the copings; together with the colour, texture and pattern of the surfaces, are problems of detail design.

We can put details into six categories:



"The buildings are the walls to the space and the road or pavings the floor. All the other objects... together with colour, texture and pattern of the surfaces, are problems of detail design."

First group: "Three-dimensional functional objects." Objects standing in the space: like kiosks and traffic signals.

Second group: "Signs and symbols." The innumerable name plates, numbers and letters which guide us about the town. Advertising signs, like shop fascias and hoardings. And such traffic signs in which typographical layout is the chief design problem.

Third group: "Barriers." Walls, fences, bollards and other obstructions which act as physical or visual barriers.

Fourth group: "Objects which, although complete in themselves, are part of a large object." Objects like an entrance porch or a kerbstone.

Fifth group: "The quality of surface." They have no existence in themselves as objects, but are simply the quality of colour, texture and pattern. Although but one aspect of design, they are, nevertheless, details because we appreciate surface qualities for their own sake.

Sixth group: "Three-dimensional objects erected to give visual pleasure." Sculpture, fountains, tubs of flowers, are obvious examples. They have an affinity with three-dimensional functional objects, but there is the distinction that being quite "useless" their design and placing rests solely on aesthetic selection.

You will agree that these six categories go to make a very large part of the urban scene.

When we first enter an urban scene we have a general impression of the complete scene. We get a sense of its spatial quality, and an overall impression of the design of the buildings and the other objects.

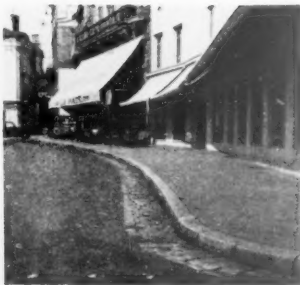
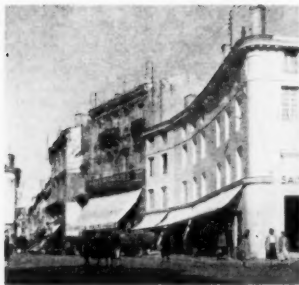
If the scene is cluttered up with innumerable badly designed objects we get a general impression of untidiness and squalor. On the other hand, if the details are well designed they give both a sense of quality and richness to the total scene, and a set of pictures in a minor key to the main composition.

When the scene is familiar we seldom look at it as a whole but rather on those scenes that are our particular concern—say, when waiting for a bus—or we notice those scenes that thrust themselves on us, like a hoarding or a tree in flower. Our eyes become focused on the detail design to the exclusion of the scene as a whole. These two scenes are at Angoulême. On the left is the broad general view, on the right the close-up as we cross the road. Notice in the latter how important the kerb and the gutter become in its form and texture, and its snaky line. Notice, too, how the blind concentrates the attention on the window.

We have then to think of details as secondary elements in a broad picture, and as major design problems in their own right.

We have to consider details in three ways: Firstly, the design of the object itself—is the lamp post well designed? Secondly, the design the object makes in relationship to other objects—is the lamp post well related to the kerb and pavings? Thirdly, we must consider the design of the object in relationship to the space in which it stands—is the lamp post so related to the street or square that it appears as an inevitable part of the spatial composition?

Many of these objects are badly designed in themselves, and some are not designed



"On the left is the broad general view, on the right the close up as we cross the road."

at all—I am sticking to my statement that in a design aesthetic sensibility must be exercised. Few of the objects are designed to bear a relationship to other objects, and few are placed in the scene as part of the composition of the space itself. They are ugly in themselves, they conflict with each other, and they confuse the spatial quality of our streets, squares, and other urban spaces.

I would now like to consider my last categories.

### Three-dimensional objects standing in space

The majority of these objects are commonly called street furniture.

The design of street and space furniture in this country is to-day deplorable. We have some pleasant objects like Sir Giles Gilbert Scott's telephone kiosks, but, on the whole, the design could scarcely be worse.

The standard of design is low because people with a trained aesthetic sensibility are neither employed to design the objects nor to select them. What usually happens at the designing end is that a purely functional solution is first arrived at, and it is then messed about to try and make it look pleasant.

The proper approach is, of course, to evolve the form from the function, and from the materials used in design. For example, the decorative quality of a lamp standard can be evolved from the shape of the mast and the arm supporting the lamp, without contorting it into extraordinary shapes, or making it monumental. And the type of post evolved for reinforced concrete will be different from that evolved from steel.

There will continue to be little improvement in design, until a very simple solution is adopted. That solution is to commission industrial designers to design the objects, just as architects are commissioned to design buildings.

As a general rule, it is obviously not easy for different manufacturers of, say, seats, lamp posts and bollards, to consult with each other, to obtain the overall imprint of one style. But I do not think it is really necessary that they should do so. It is true that design is now so bad that objects do fight with each other, but if qualified people were commissioned to design the objects, they would automatically have affinity. It would not be so close as, say, the work coming under the direction of one body, but, as I have suggested, I see no reason why it should be. Whilst we do not want the urban scene to be chaotic, we do need sufficient contrast between the forms to give

variety, and prevent the scene from being over-refined and effete.

When we come to placing the objects in relationship to the space, it is obvious that the positions of certain of them are determined functionally, in particular those in connection with traffic control. The number of these increases daily, and there is in consequence a scramble for the key positions. The average traffic island near a road intersection becomes more and more loaded with equipment.

Different authorities erect their objects without regard to other objects. Quite obviously, appearance would be less chaotic if there was greater collaboration; and, quite obviously, the scene would appear less cluttered-up if different articles were combined together.

With many of the other objects, like seats and kiosks, there is a wide choice in placing them in the urban scene. In deciding the position of an object we have to think of its position in relationship to the general circulation in the space—the planning problem. We have to consider whether its form will be seen in silhouette—small objects should not, as a rule, be placed in the opening of a large space because, being silhouetted, it becomes too important. We have to consider its form in relationship to the background of buildings—for example, a kiosk placed on the major axis of a

building will mask the central feature of that building. And we have to consider its position in the space itself—for example, a coffee stall placed in the dead centre of a space will seldom look right, because too small an element is made the pivot of the design.

It is abundantly clear that the placing of these objects is a significant part of the design of the urban space as a whole. In consequence, one individual, the town designer, must be held responsible for studying the qualities of the space and relating the objects to it. We cannot hope to have satisfactory urban scenes whilst anyone is allowed to erect anything, irrespective of the design of the total environment.

### Signs and symbols

The various directional signs for showing the way about the town, like signposts, street names and names on buildings, are, compared with the previous group, reasonably well designed.

The prime problem here is typographical: well-designed letters, and well-spaced—both in relationship to each other and to their background.

Many traffic notices have a clear type, to a British Standard Specification, and the general type used for many signs is a simple legible variety like Gill Sans. However good that these simple types are, there is now a move towards more robust and more decorative types—we are, I am sure, all looking forward to seeing how the interesting types chosen for the Festival of Britain will work out in practice. This move is all to the good, for a vigorous type will certainly help give the urban scene a lively appearance without making it chaotic.

One of the chief points of criticism with street name plates is the method of mounting. It is, of course, infuriating to search for the name of a street amongst the architectural embellishments of a building. But I do suggest that it is not always necessary to mount a simple thing like a street name plate on a reinforced concrete beam supported on two reinforced columns some five feet high.

One of the most encouraging things about lettering in relationship to buildings is that



"The standard of design is low."

architects are now tending to design it as an integral part of the design—not just as good lettering on a background of building but as an element in design.

Obviously, when the practice extends to illuminated signs like neon lighting, the street scene will gain great vitality.

So much has been said about the evils of advertising on buildings that there is little I need say about the subject. The new Control of Advertisements Order will enable local authorities to keep advertising under control. But whilst the use of buildings wholly for advertising is thoroughly objectionable, it is highly dangerous to place too strong a control on advertising. The problem is one of the character of the space. In a shopping street, for example, I would allow the shopkeeper to do just what he likes below the line of the top of the fascia. His job is to sell goods by an attractive display, and the more individual this display and its setting is, the more lively will the scene be; and the better will the public like it. Almost every attempt at imposing standard shopfronts, lettering or fascias, on a shopping street, has resulted in a dull and dreary scene.

With an entertainment space like a cinema or theatre square, the advertising may extend on to the façade of the building, providing its mounting is designed as an integral part of the façade. A more than life-size poster of Miss Betty Grable looks magnificent when set in an architectural framework; but she must not be just spread over the façade, irrespective of the architecture, as she will most certainly devalue the forms invented by the architect.

If restrictions are placed on buildings as sites for advertising, then one would expect sites to be provided elsewhere.

With advertising designed as an integral part of the scene, rather than plastered over buildings, what is so often an eyesore could be turned into great decorative gain.

### Barriers

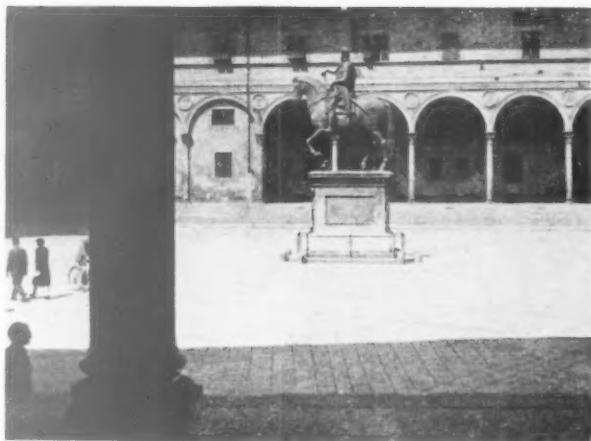
The aesthetic value of the miles of walls, fences, railings and rails that clutter up the urban scene rests on their qualities of form, colour and texture; on the extent to which they control the view; and on the extent to which they form a visual link between one form and another.

As a race, we have a passion for erecting barriers, with the consequence that the urban scene is cluttered up with an excess of materials, and in particular the spatial quality of our urban spaces is disrupted.

The first problem with the detailed design is to see how much of these barriers can be swept away. Thus, we could eliminate fences which do no more than mark a change in property ownership; we could eliminate those that owe their existence to the Victorian passion for wrought and cast iron as a decorative feature. And we could eliminate those barriers that owe their existence to a desire to regiment the townsman.

The removal of railings during the war, for scrap, showed how tremendously the urban scene was improved, through the floor space being able to extend to the walls without interruption—what a pity it is that wood, brick and stone haven't much scrap value.

Unfortunately, many of the railings are now being replaced by massive concrete and chain-link fences, hideous in the extreme. Some fences had to go back, as the destruction to property was too great—but a low barrier would generally be sufficient. Many of the new fences would have been quite unnecessary if the freed space had been readjusted in design to take the new paths of circulation. For example, some of the London squares were spoilt by people taking short cuts across them, but the answer



"This simple rail round the statue at Florence makes a more significant composition than would be the case were it barricaded behind a fence of wrought iron."

was not to shut them up again but to lay new paths on the obvious lines of circulation.

The two extreme types of barrier are the tall wall, and the rail or chain. The wall because it gives obstruction to the view—it is a complete visual barrier. The rail or chain because it offers the least visual obstruction, and further because it may not even be a real physical barrier—anyone, for example, can step over the post and chains and dogs can walk underneath. Nevertheless, they do provide protection by acting as a visual deterrent.

A wall has the formal qualities of mass, and the surface qualities of colour and texture, but the value of a fence or a rail rests almost entirely on line, it having no qualities of mass and little of texture. Its lines are seen in space and form a silhouetted pattern.

Between these two extremes are all kinds of walls and rails, used either singly or in combination, and performing the same function of providing visual protection, and of acting visually as either barriers or links. The wall that gives complete obstruction to the view can be used to define space just as do the walls of a building and, since this is a basic rather than a detailed design problem, I shall make no further mention of them, save only to emphasize how tremendously important they are in the visual scene. Innumerable post-war housing schemes have been visually ruined because in place of screen walls linking one façade

to another, there are wide open gaps, with the consequence that the space spills out and there is no sense of enclosure. Heartiest congratulations to those architects who ignored a Government order prohibiting the use of brickwork for screen walls.

When it comes to the choice of a rail or fence, the first question to be asked is "Is it needed at all?" Far too many fences are erected simply to mark the change of ownership or through an over-developed sense of property ownership. If the barriers in front of the English houses were swept away, the floor plan could flow up to the buildings and give the whole scene greater repose and cohesion.

If a fence really is needed, then the right solution is the simplest possible design. There are countless instances where a simple rail supported on posts is sufficient to give a visual and factual barrier. The posts cause the least possible disturbance to the floor plane, and the rail does little more than trace a horizontal line across the picture. Substitute a heavy railing or a chain-link fence, and the scene is ruined.

There are many excellent standard types of wrought iron or mild steel fences made up from flat, round or square sections, but there has been a sad decline from Regency days in the more decorative types, commonly known as "architectural metalwork." Most decorative ironwork is to-day to rather commonplace modernistic designs, although architects are at last beginning to try and recapture the grace and interest of the traditional patterns, in, of course, a contemporary manner. One of the many questions that confounded me when I sat for the final examination of this Institute was, "What is the architectural function of a railing?" Its use is to give protection, and as protection it can be used in association with architecture. But to erect it simply as applied decoration seems to me to be just nonsense.

Although the linear pattern of railings may form a splendid contrast to the planes of architecture, care must be taken that they do not confuse the basic forms. Bridges are a case in point. Many Victorian and modern designs have balustrades with ponderous metal infillings, which conflict with the structural shape of the bridge itself.

I should like to talk about the many



Rail by Brian O'Rourke. "The posts cause the least possible disturbance of the floor plane, and the rail does little more than trace a line across the picture."



dimensional quality, which contrasts with the two-dimensional quality of the façade.

The third point is that they tend to bring the scene down to a human scale. However large the building may be, the details like the entrance doors will be in scale with the people using them.

The fourth point is that the architect in placing his details should think beyond the composition of his building, and consider its effect on the composition of the space. For instance, the canopy over a theatre does not just belong to the theatre itself. It belongs to the milling theatre crowd and the motor cars drawn up underneath it. It is part of a lively and dynamic street scene, which may take little account of the building at all.

#### *The quality of surface. Space floors*

The texture, pattern and colour of the walls, floors and furnishings of urban spaces act much in the same way as the other details. They can provide variety by a sudden contrast—say a patch of bright primary colour on a building; they can reduce the scale—as when a broad expanse of flooring is formed from small blocks; and they provide a field of visual interest in a minor key to the main composition. But they have an additional value of great importance, namely, that they can weld a scene into a harmonious whole—as when the floor of a space is designed with a strong overall pat-

\* \* \*

*"The rail or chain offers the least visual obstruction, and may not even be a real physical barrier."*

types of lovely wooden fences, and about dwarf walls, copings, kerbs and bollards.

The illustrations are from some pictures from my collection. By the way, everyone concerned with town design might make their own collection of details. All you need is a sketch book and a camera. It only takes a few minutes to capture a scene—you can, of course, charge the cost of film up to expenses—and it is surprising how it widens one's visual sensibility.

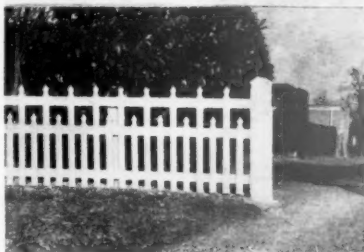
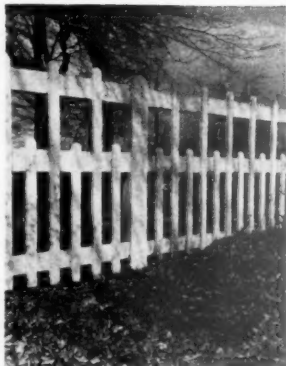
#### *Complete compositions which are a part of larger compositions*

Objects like entrance porches and bay windows cannot exist in isolation, but have, nevertheless, a life of their own in that they are complete compositions.

Most details of this kind are aspects of architectural design which is outside my subject to-night, but I must make four points:

The first is that details in architecture are not just architectural features, but any object or surface which acts as a focus in the picture.

The second is that they are of great importance in the composition, as they give a richness and a visual variety. A projecting porch, a bay window, or some other feature, apart from its decorative value, has a three-



*Traditional wood fences. "Everyone concerned with town design might make their own collection of details."*



"It will once again be possible to obtain an intimacy in design between the wall and the floor planes. Take this charming example at Bath."

tern, or when the walls of a space—the buildings—are painted the same colour.

I will limit myself to the floorings of spaces, for of all the surfaces these are the most neglected.

Floorings are usually thought of as the pavements, but since all the surfaces of a town should give pleasure to look at, the meaning of the word should be extended to include all the horizontal surfaces, whether they are for walking on or not.

The floors may be divided into two basic types: continuous and jointed. Continuous are those laid with an unbroken surface, like tar macadam and grass, and jointed those that are formed by assembling small units.

The continuous are generally associated with the wider urban areas like the main roads and stretches of landscape: the jointed with the more intimate areas like pedestrian precincts. This is as it should be, because the jointed materials have a quality which the others have not: Pattern.

The more intimate areas are those that we examine in the greatest detail, and are those that are closest to buildings. In both cases the pattern formed by the joints is very important, because it gives the floor an affinity with the walls, and helps to reduce the scale.

So much so that the floors of our towns are now little more than dreary wastes of concrete and tar macadam.

However, now that wheeled traffic is being taken out of the town's squares, or canalized in comparatively narrow lanes, large areas of flooring can be designed to take the comparatively light load and wear of the pedestrian. This will give a much wider choice of materials, and, of course, patterns; and we shall expect, and indeed there is every indication, that there will be a revival of the aesthetic expression of the floor plane.

It will once again be possible to obtain an intimacy in design between the floor and wall planes. It will once again be possible for the pattern of the space floor to reflect the structural pattern of the buildings; and the floor itself will once again be an interesting surface to walk over.

As a general principle, it can be said that floors cannot, as a rule, be designed to the same degrees of intricacy as wall patterns, because one cannot stand away from them and see them head on as a flat plane, and further, because they are disturbed by people walking over them, or by

objects like telephone kiosks standing on them. Therefore, in designing patterns on the drawing board, one must always keep at the back of one's mind that the design is seen obliquely, and that it will be confused by other forms.

Since there is so much choice with floor patterns, it is very sad that in this country we seem to have standardized our pavings to a pattern formed by three-by-two and two-by-two concrete slabs. I know this is a serviceable job, but couldn't we try something else just for the sake of appearance?

For example, in Holland a 12-in. square slab is used extensively with both broken and straight joints; and 18- and 24- and 30-in. square slabs will all help to provide variety and give a greater range of scales.

Pavements or footpaths that take little traffic may be built up from combinations of different materials to save cost, or provide variety in appearance. Thus a strip of 3-ft. wide stone slab can be laid down for walking on and an additional 1-ft. width of gravel or stones laid at each side to prevent the adjacent edges from being trodden down when people pass each other. Or again, a plain ribbon of *in situ* concrete divided up by expansion strips will come to life if borders of stones set in cement are run on each side of it.

#### Useless objects in space

My sixth and last group is too wide a field to tackle at this time of night.

All I need do is to remind you that Sitte, in *The Art of Building Cities*, has things to say on the placing of statues in space that will remain true for all time, and to show you this last slide of the Piazza Signoria in Florence. Notice how the whole space pivots on the giant statue of Neptune standing against the corner of the palace; notice how this, and the equestrian statue, draw a line across the space—a sort of optical barrier—sub-dividing it into two. Notice what a magnificent background the masonry of the palace forms to the statue standing in front of it, and how the arches of a loggia contain the writhing forms of the other groups. Here are useless objects, not only splendid in themselves, not only perfect contrasts to the architectural scene, but dynamic elements in the design of the space itself.

Many examples such as this inspire us to do even better.

## IN PARLIAMENT

More than 5 to 1

**MR. PROFUMO** asked the Minister of Local Government and Planning whether he would consider sanctioning the issue of private building licences in excess of the ratio of one-in-five to districts where he was satisfied that such action would more speedily alleviate the housing shortage without interfering with the local authority's council housing programme. **Mr. Dalton**—Yes. (Feb. 27.)

### Less on Repairs

**Mr. Vane** asked the Minister of Local Government and Planning whether he would give local authorities greater freedom in the issue of licences for the necessary repairs and improvements to existing houses where the amount of scarce material to be used was small. **Mr. Lindgren**, the Parliamentary Secretary—Not at present, in view of the need to limit the use of labour, as well as the materials on this work. (Mar. 1.)

**Mr. T. Fraser**, Under Secretary, Scottish Office, stated in answer to a question on February 27 that because of restrictions on capital investment, local authorities in Scotland had been asked to limit the licensing of work for the repair, conversion, or improvement of existing dwellings in general to about 80 per cent. of the amount licensed in 1949.

### Timber Prices

**Mr. Marples** asked the President of the Board of Trade when he would announce the prices at which he was going to sell to the timber trade the imported softwoods his department had purchased. (Mar. 1.) **Mr. Harold Wilson**—From to-day onwards, the new prices will be sent to timber traders who have signified their willingness to buy from Timber Control on the basis which has been approved.

### Canadian Arrivals

**Mr. Harold Wilson** informed Lady Tweedsmuir that dollars were allocated which enabled contracts for 490,000 standards of softwood to be placed in Canada in 1950, mainly for delivery this year. The corresponding figure for 1949 was 122,000 standards. He hoped that arrivals of Canadian softwood during 1951 would be higher than in any year since the war. He was unable to say in advance what contracts would be placed in Canada this year. (Mar. 1.)

**The Chancellor of the Exchequer** informed **Mr. Donnelly** (Feb. 28) that the recommendations of the Gowers Committee on houses of outstanding historical or architectural interest were being considered, but he could not yet make any announcement of what action would be proposed.

### Reduced Capacity

**The Minister of Works, Mr. Stokes**, informed **Mr. Bosom** (Feb. 27) that the gross cubic capacity of the new Colonial Office building previously planned to cover the old Stationery Office and Westminster Hospital site would have been about 4,896,500 cubic feet. The capacity of the smaller building now proposed will be about 4,660,000 cubic feet.

THE ADMINISTRATIVE  
STAFF COLLEGE  
GREENLANDS  
Henley-on-Thames

Conversion  
of Stables  
into a  
Library

architect:  
GEDDES HYSLOP  
F.R.I.B.A.

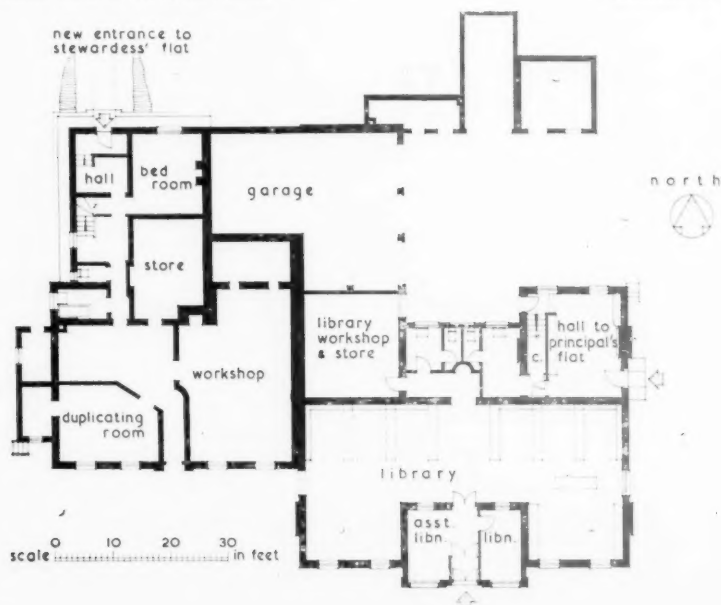


The alterations to the exterior consist in the removal of gable parapets, ground floor windows have been lowered and new windows added on each side of the door. The walls are finished in white Cementone, and the windows are painted white in grey-green frames.

WHEN Lord Hambleden lived at Greenland before the last war the large Victorian stables had been unused for many years. The new use of the property by the Administrative Staff College has brought fresh life to the building and where a dozen pampered horses stood munching in their stalls or lounged in loose boxes, earnest young administrators thumb the pages of the Economist and peruse the latest Blue Books.

The existing space was ideally

(Continued on p. 288)





One side of the book shelving. The bookcases are in oak with backs painted red. The solid panels allow for extension of shelving at right angles to the main run. The walls are blue-green eggshell with white cornice picked out in red. The light fittings are burnished gold and red.



Periodical fittings. The curtains are linen striped lime-green and pink.



Inside the entrance. The bulls-eyes were added to give more light. Floor and skirting are cork.



The entrance. The librarian's room is on the right. Original framing of the loose box has been adapted. Over the door can be seen the gilded college emblem.

suited to the arrangement required for the storage of books and periodicals and areas for reading. A major defect was the darkness in the centre. This has been minimised by forming two large windows on either side of the entrance with bullseyes in the inner wall. The old casement windows were replaced by double hung sashes with lowered sills.

The floor is of cork tiles and the bookcases and other fittings are in oak. The furniture is, for the present, makeshift, but it is hoped soon to have more suitable tables and chairs.

The bookcases have capacity for about 8,000 volumes with room for expansion to 11,000 by the addition of further bookcases at right angles to the walls. Some 200 periodicals and pamphlets can be displayed. The more important

periodicals are housed on tip-up shelves with the back numbers stacked behind.

The walls, plastered in Keenes, after stripping the old glazed tiles and plaster, are painted in blue-green eggshell paint; the backs of the bookcases and the inner passage are in red. Apart from the oak fittings the wood work and the cornice band are white, the key fret picked out in red. The ceiling is lime plaster, finished slightly rough and left its natural colour. The curtains are lime yellow and red linen and the light fittings are finished in burnished gold and red. Heating is by radiators fed from the central boilers.

The outside has been improved by the new windows and painting in white Cementone. Parapets to the gables and chimney stacks without damp courses were a

source of dampness; their removal has been advantageous to the appearance.

#### GREENLANDS

QUANTITY SURVEYORS: MESSRS. CAMERON & MIDDLETON.

GENERAL CONTRACTOR: A. BROWN & SONS, NETTLEBED.

Heating Engineers: R. W. Steel & Co. Ltd. Electricians: Southern Electricity Board, Marlow.

Cork Flooring: E. J. Elgood Ltd.

Oak Bookcases and Fittings: Samuel Elliott & Sons (Reading) Ltd.

Fibrous Plaster Band and Curtain Boxes: G. Jackson & Sons Ltd.

Paint: Hadfields (Merton) Ltd.

Light Fittings: Oswald Hollmann.

Ironmongery: Yannedis & Co. Ltd.

Curtains: Adam House Ltd., Henley-on-Thames.

Carved Emblems: Mr. P. Morton.

## Pair of Stone Cottages at Abbeystead near Lancaster

architect

A. T. NICHOLSON, F.R.I.B.A.

ABBEYSTED is a scattered village lying at the head of the valley of the Wyre on the Lancashire slopes of the Pennine Range, between Preston and Lancaster.

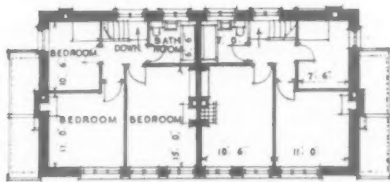
The farms and cottages in the area are built of Millstone Grit. The roofs of the barns and many of the older farm houses are of stone slates.

Into this landscape these two cottages had to be built for the Rt. Hon. the Earl of Sefton. The difficulty was not stone but stone mason, even though it was a purely stone area. Despite this difficulty, it was agreed to proceed in stone. The stone for the rubble walling was procured from derelict buildings on the estate. The cottages had, therefore a weathered appearance from the day they were finished. The whole of the stonework was done by one mason. The external stone walls are 9 inches thick, with a 2 inch cavity and 4½ inch brick internal.

The question of stone tiles had to be abandoned, owing to the additional timber which would have been required to hold these. The nearest approach to the colouring was a Cotswold grey tile.

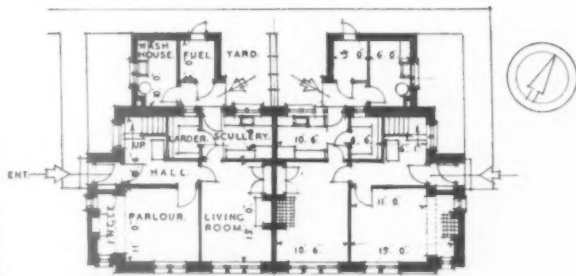
The cottages were built in 1948 at a cost of £2,970.

Contractors: Messrs. Fairhope Ltd., of Morecambe.



FIRST FLOOR PLAN.

FOUR



GROUND FLOOR PLAN.

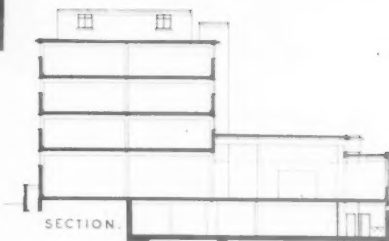


☛ The front elevation from north-east.

## ST. TERESA BAKERY PLYMOUTH

architects:

SIR JOHN BURNET,  
TAIT AND PARTNERS



**T**HIS building is a new Bakery and Warehouse built on a bombed site. It supplies a number of stores in the Plymouth area owned by Messrs. E. Dingle & Co. Ltd., who also own the bakery.

The site slopes from north to south and advantage has been taken of this slope to locate in the basement the staff cloaks, fuel oil storage, sub-station, sausage making department, cooking department, ice cream making and the cold stores. Over-head rails convey meat carcasses from the goods lift to the cold stores.

The roughly "L" shaped building at ground level encloses the service yard with its two loading docks. One of these deals with the arrival and despatch of products of the bakery. These include:— bread, biscuits, cakes, meat pies, sausages, cooked

meats and ice cream. The lift here serves the ground floor and basement only.

The second loading dock deals with all those goods appertaining to a general store and has two large goods lifts serving the upper floors.

The major portion of the ground floor is taken up by the bakery with adjacent areas for flour store and issuing and finishing departments. The remainder of this floor is chiefly devoted to the packing of groceries such as butter, sugar, tea, and flour which are supplied by hoppers from the floor above.

The first floor is used for receiving and storage of bulk food, which is broken down to supply the clients' shops and orders from individual customers.

Staff canteen, carpet workroom,

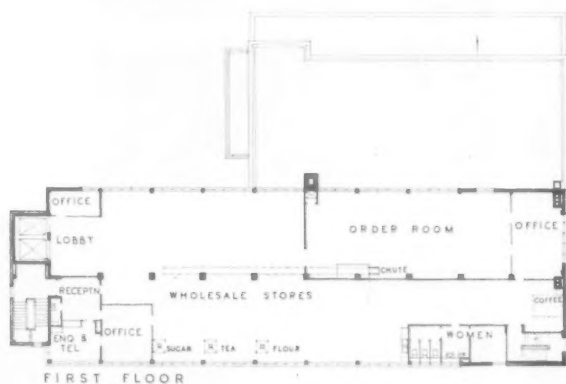
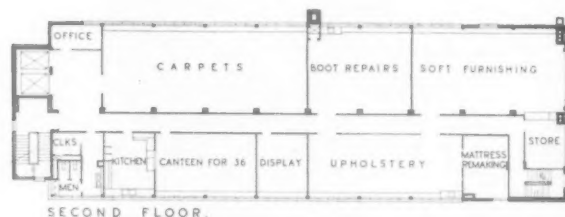
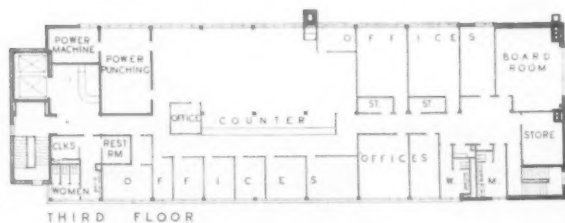
shoe repair department, and general repair and maintenance departments are housed on the second floor.

The third floor accommodates Directors' suite and Accounts Department.

### Construction

The building is of steel framed construction. Floors are reinforced concrete in the basement and on the ground floor; other floors are in hollow tile.

The external walls are clad in a special type of pre-cast concrete panel, designed to overcome the shortage of bricks prevailing at the time the bakery was built. The panels are shown in a detail on page 294 and have the particular advantage that they can be fixed in position from the inside of the building.



**GENERAL CONTRACTORS:** WILLIAM COWLIN & SON LTD.—First, Second and Third Floor; PEARN BROTHERS LTD.—Basement and Ground Floor.

**Floors—Hollow Tile:** Diespeker & Co. Ltd.

**Heating—Hot Water, Plumbing and Drainage:** Matthew Hall & Co. Ltd.

**Ironmongery:** James Gibbons Ltd.

**Lifts:** G. K. Jenson & Co. Ltd.

**Partitions to Office on Third Floor—**Roneo Ltd.

**Precast Concrete Work including the external wall panels:** F. J. Moore Ltd.

**Roofs—Flat:** Standard Flat Roofing Co.; Val de Travers Asphalt Paving Co. Ltd.

**Sanitary Fittings:** John Bolding & Sons Ltd.

**Shutters—Rolling Steel:** Mather & Platt Ltd.

**Staircases—Metal:** Fredk. Braby & Co. Ltd.

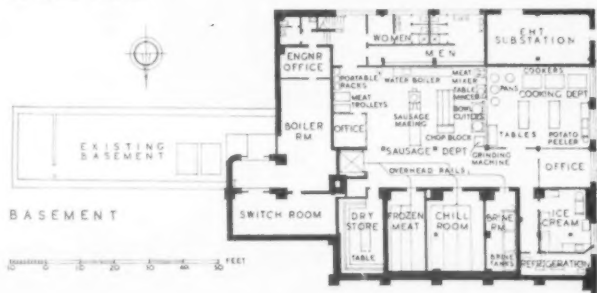
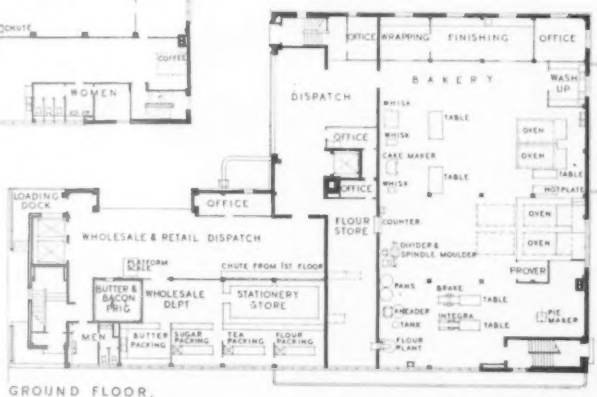
**Steelwork:**

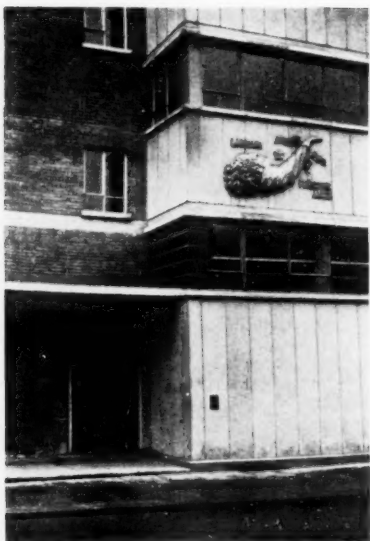
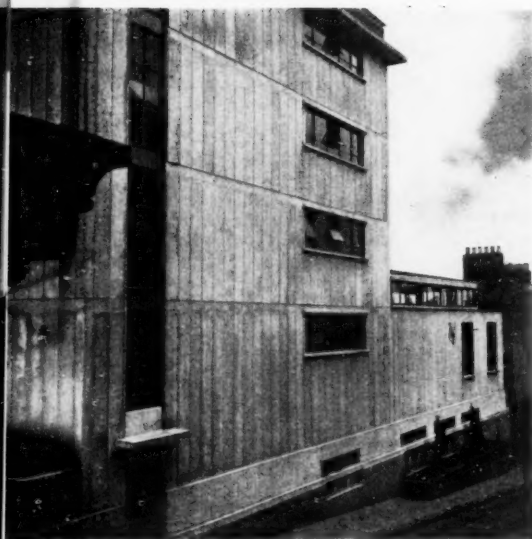
Blight & White Ltd.—Ground and First.

Laidlaw Smith Ltd.—First Floor.

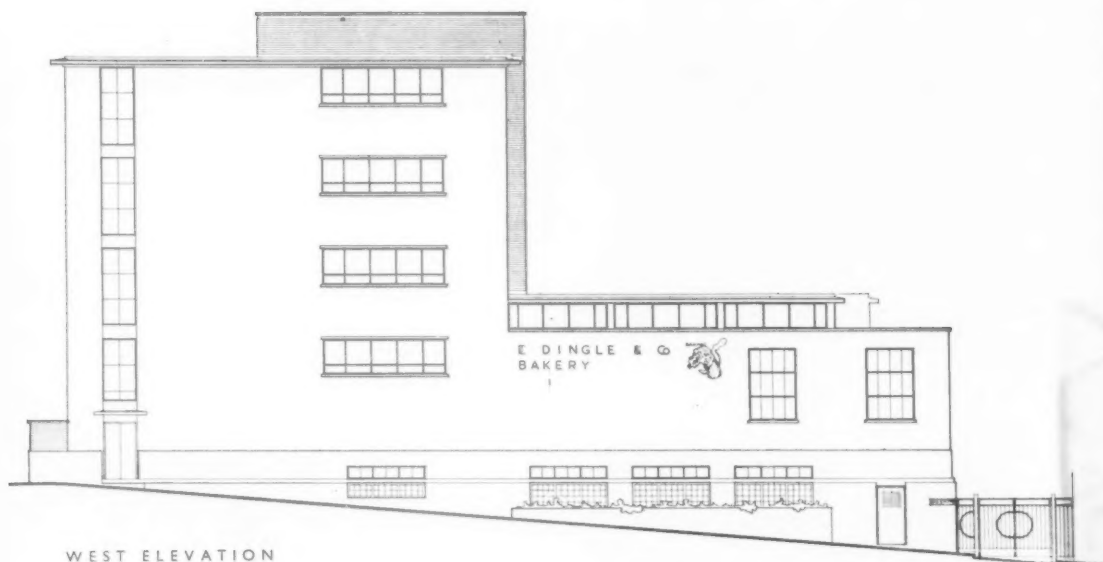
Dawnays Ltd.—Second and Third Floors.

**Windows—Metal:** Crittall Manufacturing Co. Ltd.

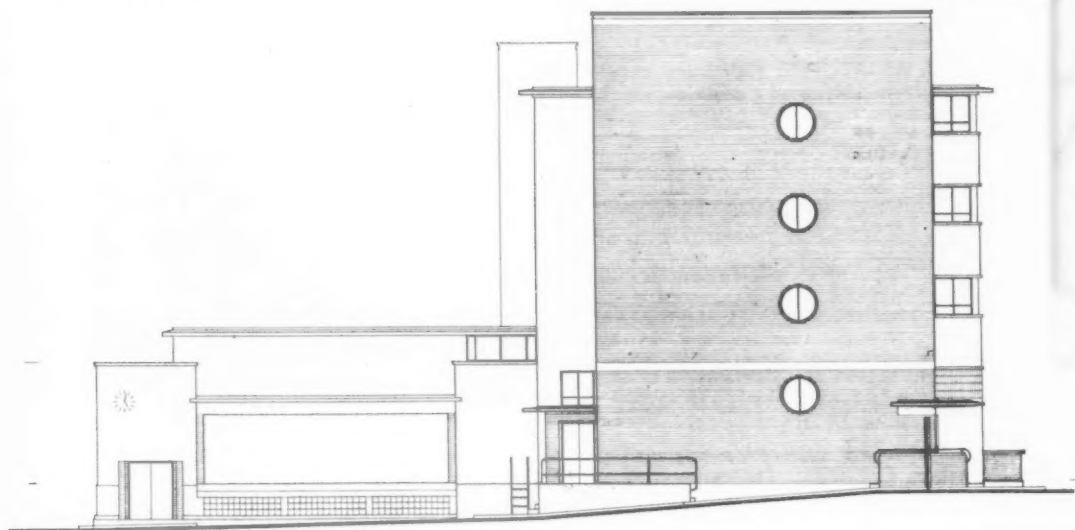


*The front entrance, north elevation.**The west elevation from south-west.**West elevation.**Dispatching bakery products, south elevation.*

S T . T E R E S A B A K E R Y , P L Y M O U T H

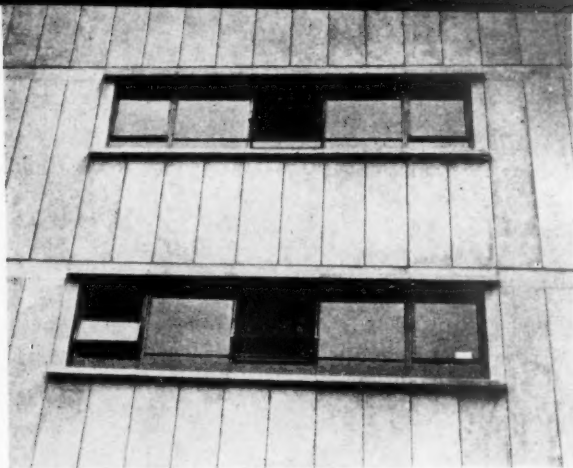


WEST ELEVATION



EAST ELEVATION

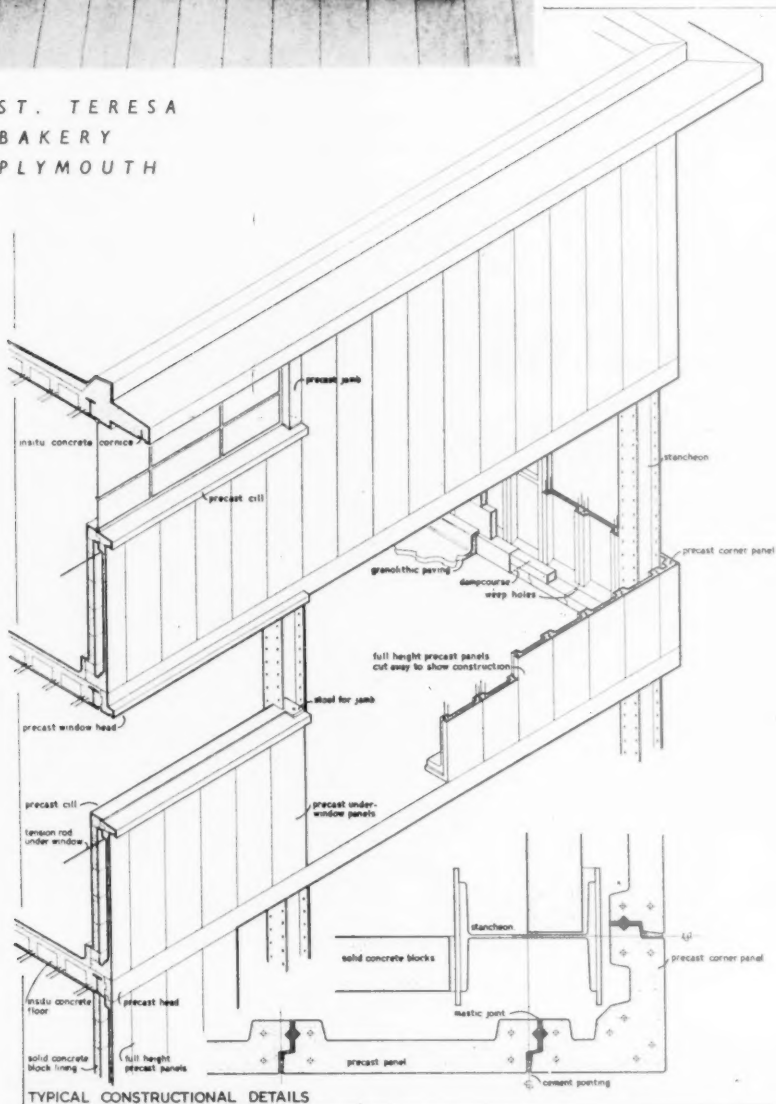
architects: SIR JOHN BURNET, TAIT AND PARTNERS



THE ARCHITECT and Building News,  
March 9, 1951

This page illustrates the construction of the bakery using the precast concrete panel. No special fixing is required for the panel as the toe at the base ensures stability, and the concrete block inner wall which is built on the toe keeps the panel in position. The panel is faced with an aggregate of Portland stone.

ST. TERESA  
BAKERY  
PLYMOUTH



## The closed shop

The only difference between a shop door and a house door used to be a few small panes of glass in the upper part of the former; both doors were shut, and although the shop door was not locked against the would-be customer, there was no invitation to enter. Today that invitation is supplied by large doors of sparkling transparent, shock-resisting "ARMOURPLATE" glass, that give an uninterrupted view of the inside of the shop from the street, and swing back at a touch to admit customers. Make the shop brighter and better by opening it up with

### PILKINGTON'S "ARMOURPLATE" Glass doors



Fenchurch Street in the late 17th Century



Brown's Furniture Store, Leicester.

Shopfitting Contractors: A. Edmunds & Co. Ltd., Birmingham 19.



Architects and Architectural Students are invited to consult our Technical Sales and Service Department at St. Helens, or our West End Office at Selwyn House, regarding the properties and uses of glass. Head Office and Works: St. Helens, Lancashire. Telephone: St. Helens 4001. West End Office and Showrooms: Selwyn House, Cleveland Row, St. James's, S.W.1. Telephone: Whitehall 5672-6. Send for the "ARMOURPLATE" Glass Doors booklet.

*Supplies are available through the usual trade channels*

## PILKINGTON BROTHERS LIMITED

"ARMOURPLATE" is the registered trade mark of Pilkington Brothers Limited

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of the Useful Arts, 1821



#### THE MASON

With sharp and practised strokes, the master-mason carves the quarried stone. Tools of his trade, the square and compasses are symbols of his life. Working towards perfection, his artistry in stone and marble will live through aeons of recorded time . . .

AND CRAFTSMANSHIP LIVES ON With the coming of the Industrial Revolution and the development of machinery, the era of the lone craftsman passed into history. No longer was one man single master of his trade. Instead, the work was divided among specialists, each one a craftsman in his own particular line. To-day, the individual is an expert, whose specialised skill is an essential part of the whole.

★  
**A**T CELLON we believe in the essence of craftsmanship. For example, after a new decorative finish has been produced by our laboratory specialists, it is tested by experts who examine every Cellon product under the conditions of use for which it is intended. Like the mason of old, whose skilled chisel inspired cold blocks of stone with all the warmth of beauty, we always strive for perfection in our finished work.

The existing range of Cerrux Decorative Paints includes Gloss, Satin and Matt Finishes, Flat under-

coatings, Primers for all types of surface and, also, Cerrusco Texture and Water Paints. The skill and forethought embraced in our work together with constant research have established perfect uniformity among our standard finishes. The result is that you can always be sure of consistency of quality when re-ordering a particular finish.

On the development side, we maintain a continuous service for the production of special finishes for special needs outside the standard range. It is, in fact, a service by craftsmen for craftsmen.

# CERRUX

## DECORATIVE PAINTS

Created  
by Craftsmanship



**CELLON**  
Aircraft  
Finishes



**CERRIC**  
Wood  
Finishes



**CERRUX**  
Marine  
Paints



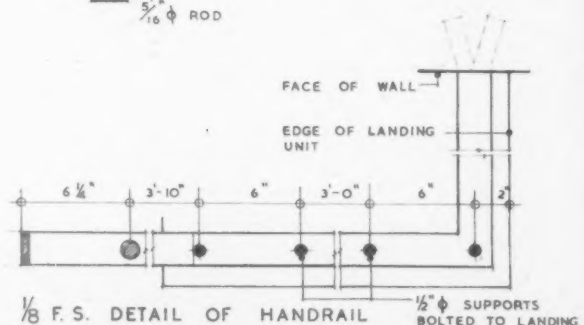
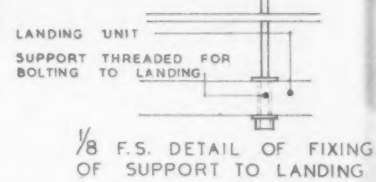
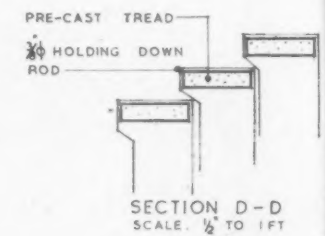
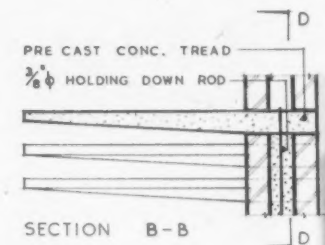
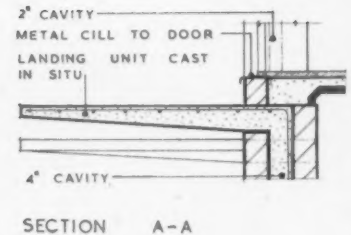
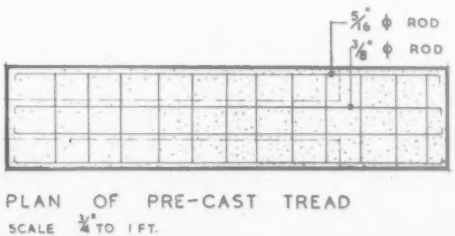
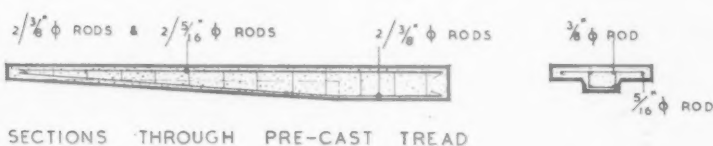
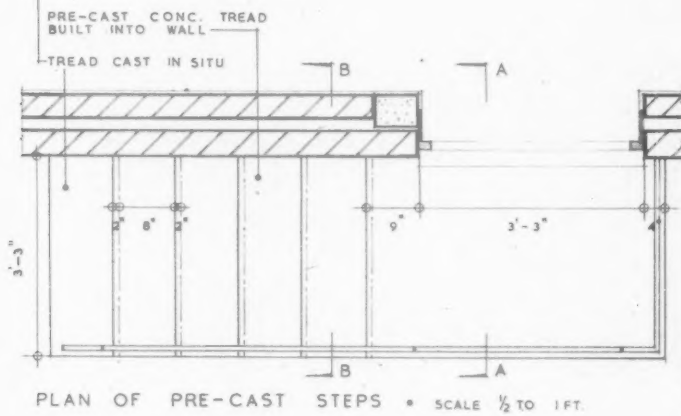
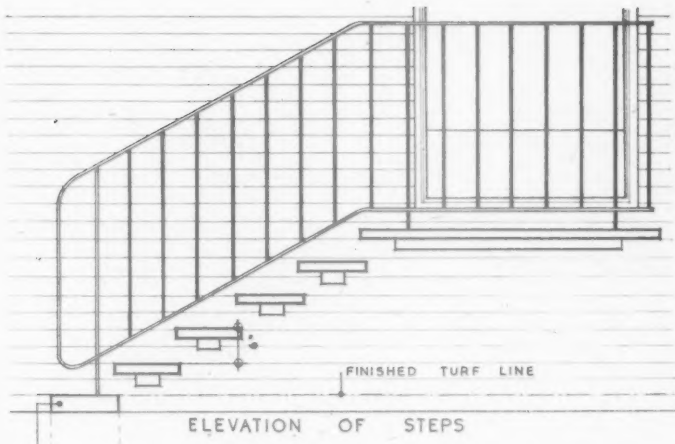
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CVS-982





PRE-CAST CONCRETE STEPS, SCHOOL AT ERITH, LESSNESS HEATH

ARCHITECT: ELIE MAYORCAS

# NEWS of the BUILDING INDUSTRY

## INTEREST

THE PRESIDENT OF THE N.F.B.T.E. has expressed regret that Mr. Dalton has not "seen his way" to abolish the 4:1 ratio in housing.

Referring to the "Builder" small house competition Mr. Hudson said that he realized the Minister's difficulties, since any decision in favour of smaller houses would be represented as an attack on standards. But, he said, some of the best architectural brains have proved in competition what builders have always known—that a good home can be built with a smaller expenditure of materials, time and money than those now being erected, and thousands of families waiting for homes of their own would rather see three houses being built instead of two. Moreover, said the President, local authorities are anxiously looking for a policy which will reduce initial subsidy from the rates and the cost of future maintenance.

**MONOPOLIES AND RESTRICTIVE PRACTICES:** Second Annual Report by the Board of Trade on the working of the Monopolies and Restrictive Practices (Inquiry and Control) Act, 1948, is now on sale at H.M. Stationery Office, price 6d. The Report covers the year 1950 and contains a survey of the suggestions and requests made to the Board of Trade for the reference of subjects to the Monopolies Commission.

This report, made annually by the Board of Trade, should not be confused with reports by the Monopolies Commission themselves. The Commission's reports deal with the subjects referred to them and appear as and when investigations are completed. Their report on the supply of cast-iron rainwater goods will be published in a few weeks' time.

**THE SUPERVISOR'S GUIDE TO THE BUILDING REGULATIONS** (published by the Royal Society for the Prevention of Accidents, 52, Grosvenor Gardens, London, S.W.1. Price 3s., post free) is intended specially for the use of supervisors and of the safety inspectors appointed under Regulation 98 of the Building (Safety, Health and Welfare) Regulations, 1948.

The pocket book contains, in detail, all the legal requirements for scaffolding, ladders, gangways, excavations, use of hoists and lifting appliances, use of vehicles, and other matters to which the supervisor and safety inspector frequently have to refer. It is a convenient size for the pocket and is bound in a strong linen cover so that it will stand up to hard wear.

**THE PROCEDURE COMMITTEE OF THE NATIONAL JOINT COUNCIL FOR THE BUILDING INDUSTRY** has now promulgated the decisions ratified on February 21 by the N.F.B.T.E. Council meeting. These decisions included the general increase of 2½d per hour in the wage rates of craftsmen and labourers in the industry and operate with effect from March 5, 1951.

**THE ROYAL SANITARY INSTITUTE** has accepted an invitation from the Corporation of Margate to hold the



MIDLANDS BUILDING EXHIBITION

The stand of the Midland Federation of Brick and Tile Manufacturers at the Midlands Building Exhibition held recently in Birmingham was designed by Philip Skelcher and Bryan E. Hatton, L. and A.R.I.B.A.

Health Congress there in 1952, from Tuesday, April 22, to Friday, April 25, inclusive.

**ARRANGEMENTS ARE BEING MADE** by the Board of Trade for the Ministry of Local Government and Planning to obtain expert advice on the timber price element in the cost of housing contracts. This is designed to enable Housing Officers to check applications from contractors for increased timber prices.

Following removal of statutory restrictions on the prices of imported softwood from March 1, the President of the Board of Trade will continue to watch the timber price position closely, and will take further measures if he considers them necessary for the protection of consumers. As was foreshadowed when partial reversion to private trading was announced last October, with a number of purchases being made by separate firms, prices must depend in greater measure on the cost of a particular consignment instead of being arranged after a survey of the whole field. Traders will be able to sell both privately imported softwoods and softwoods purchased from Timber Control at prices based on those which they are paying.

**PEAT AND CEMENT** have been combined in experiments at the building research station at East Kilbride to produce "peatcrete". A building of "peatcrete" blocks has been erected in Skye.

**FIBRE BUILDING BOARDS**, their manufacture properties and uses are the subject of a lecture to be given at 6.0 p.m. on March 15 at 11, Upper Belgrave Street, London, S.W.1 under the auspices of the

Building Materials Group of the Society of Chemical Industry.

**ARCHITECTURAL COMMITTEE CHAIRMAN** Mr. C. M. Hartnell recently referred to criticism levelled against the accuracy of estimates supplied by the City Architect of Bristol. In some cases he said, errors of judgment had occurred but errors in the main had been aggravated by the impossibly short time allowed to provide accurate estimates.

Mr. Hartnell pointed out that there was only one correct way in which to prepare estimates for building works—to prepare a detailed survey of the site with adequate levels; to dig a requisite number of trial holes to ascertain sub-soil data; to prepare detailed working drawings of any extra foundations, drains, retaining walls, and general site works, and then to submit them to the quantity surveyor for measurement. All this takes time, but some committees have fallen into the practice of requiring the City Architect to supply estimates for building works at short notice—in some cases 24 hours' notice. It is obviously impossible in that time to follow the correct procedure before giving the estimates.

**THE L.M.B.A. 95th General Meeting** of Central Area No. 1 will be held at Derry & Tom's Restaurant, Kensington High Street, W.8, at 2 p.m., on Wednesday, March 14, 1951, and will be preceded by a luncheon at 12.45 for 1 p.m.

The guest of honour will be the President of the Association, Mr. Dudley F. Cox, President, L.M.B.A., supported by Mr. D. E. Woodbine Parish, F.I.O.B., Vice-President and the Director, Mr. G. H. A. Hughes, F.R.I.C.S., F.I.Arb.

(Continued on page 299)



## FINISHES, LIGHT DIFFUSING

D2/1

The fabric of this lampshade is seamless being built up on the frame in the form of a cocoon by a patent process. The makers claim that the fabric is non-inflammable; proof against moisture and heat; and elastic enough to return to its original shape if dented. The light diffusion properties of the material are quite remarkable as was recently demonstrated when a number of different designs of shade were shown in London.

The range of shapes which can be built up is almost unlimited. The material can be produced in colour but the ivory white, which can be finished in various textures is excellent and possesses the advantage of taking on, perfectly evenly, the colour of the light source. This material has been seized upon by eminent designers for the Festival of Britain as an ideal medium for giving freedom of design with quality. The shade illustrated was designed by Mr. Beverley Pick, M.S.I.A.

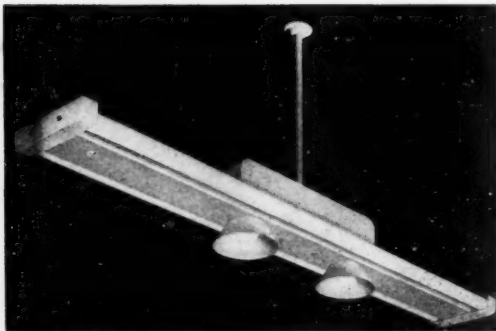
## MOSAICS

The names and addresses of manufacturers of any item illustrated in MOSAICS, together with more detailed information relating to their products—including price and availability—will be forwarded to readers on request.

Letters should quote the serial number and be addressed to:

The Associate Editor,  
The Architect and Building News,  
Dorset House,  
Stamford Street, S.E.1.

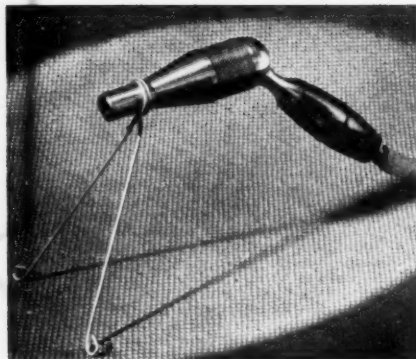
Please mark the envelope MOSAICS.



## SERVICES, LIGHTING

B1 10

A combined fitting which incorporates tungsten and fluorescent lamps. The fitting is designed to take two 40 watt 4 ft. fluorescent lamps with two 60 watt tungsten lamps. The loss in overall efficiency resulting from the combination is offset by the special uses for which this lamp has been designed.



## PLANT & TOOLS, HAND TOOLS

E3/10

This self blowing gas torch operates on coal gas without the aid of compressed air. Used on towns gas of 450 c.v. 5.5 Sp. Gr. at 30/10 in. pressure the flame temperature is claimed to be over 1450 deg. centigrade.

This model is a new product designed for leadburning, brazing and sweating etc. Larger models for heavy industrial processes are in course of development. The torch complete with wire rest retails at 65/-. The weight is 1½ lb. Nozzle diameter is ½ in. The hose required is ½ in. bore.



## PLANT, TRACTORS, DUMPERS, ETC.

E7/3

The prototype of this new Diesel dumper was produced in June 1950. This model comes into production this month.

The dumper has two speeds in either direction. There is no clutch pedal. Controls and seat rotate to give vision control in either direction.

Struck capacity of the skip is 14 cu. ft. The wheel base is 5 ft. 6 in. Turning circle with engine forward is 30 ft.; with skip forward 28 ft. The illustration shows the independent wheel springing and centre pivoted steering axle. Low skip height—3 ft. 4 in., makes for easy loading and the climbing power is said to be good.

## M.O.W. LECTURES

### March 13

Mining Subsidence.  
7.0 p.m. at Y.M.C.A. Little Theatre,  
Fawcett Street, SUNDERLAND.  
Application of Zinc in Building.  
7.0 p.m. at Technical College, Manor  
Croft, BURTON-ON-TRENT.

### March 14

Good Practice in Domestic Drainage.  
7.30 p.m. at Du-Jon Restaurant,  
Market Place, PETERBOROUGH.  
Introduction to Site Costing for Builders.  
7.0 p.m. at Heriot-Watt College, EDINBURGH.

### March 15

Good Practice in Plumbing.  
7.15 p.m. at Walker Hall, Technical  
College, Abbey Foregate, SHREWS-  
BURY.  
Good Practice in Domestic Drainage.  
7.15 p.m. at Gas Showrooms, Osborne  
Street, GRIMSBY.  
Structural Use of Steel in Building.  
7.15 p.m. at The Lecture Hall, College  
of Technology, Warren Street, SHEFFIELD, 4.

### March 19

Standard Method of Measurement.  
7.15 p.m. at Electricity Showrooms,  
The Hayes, CARDIFF.

### March 20

Standard Method of Measurement.  
7.15 p.m. at The Guildhall, Civic  
Centre, SWANSEA.  
Mechanization of Small Jobs.  
7.0 p.m. at Technical College, WORK-  
INGTON.

### March 21

Heating Research for Houses.  
7.0 p.m. at Hereford College of Further  
Education, Newtown Road, HERE-  
FORD.  
Essentials of Good Concrete.  
7.15 p.m. at Heriot-Watt College, EDINBURGH.  
The Construction of the Broadway  
Tunnel, Derby Main Drainage Scheme.  
7.15 p.m. at The Guildhall, Market  
Place, DERBY.

### March 28

Painting New Plaster and Cement.  
7.15 p.m. at Building Department,  
Technical College, Cauldon Place,  
STOKE-ON-TRENT.

# GOOD, BAD OR INDIFFERENT?

No. 26—By A. FOREMAN

## Back-syphonage.

I HAVE heard quite a lot of discussion in recent months on the subject of back-syphonage in plumbing systems and the dreadful risks that we are supposed to be running to our health. So I was very amused to receive an advertisement a week or two ago for a design of lavatory basin which conveyed the impression that it had been specially designed to overcome the possibility of back-syphonage. I well remember this particular design of basin being pressed on one of my architect friends at least fifteen years ago as having been specially designed to match the then new, cut-away type of cast iron bath. It may be that this basin does achieve what is needed to overcome back-syphonage but if its incidence is rare it seems to be a pity to install a basin that has reduced protection to the user at the point where he is most likely to splash water down himself.

Back-syphonage seems to be a bee in the bonnet of the B.R.S. and in those of a few purist sanitarians but I very much wonder if there is any real risk to health in the average domestic installation which has been properly designed and carried out. In case any reader does not know already, back-syphonage is the drawing back of water from a sanitary appliance into the distribution system. The sort of thing that causes back-syphonage is when an appliance, such as a bath or basin, has a stoppered waste and overflow and is filled so that the tap outlets are submerged or very nearly submerged and then a tap at some other and lower point is opened when the pressure in the supply pipe is inadequate from its main source, such as the cold cistern. The result is that water from the appliance is drawn back or syphoned into the supply pipe. From this brief outline it will be

noticed that a number of unusual things all have to happen simultaneously.

I have seen the B.R.S. laboratory demonstration that back syphonage in water supply pipes is possible and I believe it. But what I am not convinced about is that it is likely to occur sufficiently often in a good plumbing system to be a risk to health in any way comparable with many other risks in normal life which we are prepared to accept. There are, in my opinion, far graver risks in our homes which we accept, as the costs of changes would be too great to be worth while. I think drinking water from taps fed from some storage cisterns I have examined is a far greater risk but it is just impossible to stop people from drinking water from a bathroom tap and filling kettles from the sink hot tap; also if we are to eliminate all risks from our homes it seems we should have neither gas, electricity or oil heaters, which are greater hazards than back-syphonage. I am sure falling out of bed is a much greater risk. Back-syphonage seems to be most likely from attachments which users fix to taps such as hand sprays and long rubber anti-splash fittings but the best installation in the world will not overcome risks like these.

Most of the scare of disease being transmitted by back-syphonage emanates from U.S.A. and unless plumbing installations have changed greatly since I worked there the risk is obviously greater there as appliances are fed directly from the main and mixing taps are widely used; in this country where we adopt cold storage cisterns fairly generally for feeding our appliances and draw-offs we cut out many opportunities for back-syphonage conditions. I have known odd instances where back-syphonage might have operated but usually there has been bad sizing of taps or piping. Even if there is a slight risk of back-syphonage once in a while, I still wonder what the risk of disease carrying

amounts to, except in places like hospitals, as I believe, subject to an appreciation of grease and soap as a flavouring, we could drink a great deal of our family waste water, let alone wash in it, without a grave risk to health.

If there is a real risk to health from our present plumbing systems I feel sure that the watch dogs of the Ministry of Health would have received pressure from the medical profession to take action long ago, or at least more recently since the B.R.S. has given so much publicity to the matter, but I have yet to hear of any proposed amendments to the Model By-laws to overcome these risks; presumably therefore the M.O.H. does not think there is a serious risk.

I have tried very hard to think how back-syphonage could occur in a properly designed system used with normal care and I have had to reach the conclusion that far too many things have to happen at the same moment for it to be more than an extremely rare occurrence; we should not therefore be justified in making changes to our present practice if additional expenditure on the systems or in the cost of the appliances may be involved. For example, I am sure we cannot afford to substitute the drop side type of bath for the usual baths to B.S.1189 in our housing schemes both on account of cost and availability.

The main safeguard that we should take is to see that our plumbing systems are properly installed by competent designers and craftsmen and that pipe sizes are adequate to meet the maximum demand on each branch or main line and also that they comply fully with the water and drainage by-laws. For example, a  $\frac{1}{2}$  in. feed pipe cannot be expected to serve properly two or three taps at different levels as all may be opened at the same time or to use a  $\frac{1}{2}$  in. pipe to serve a bath, a basin and a sink as has often been seen.

## NEW HEADQUARTERS OF THE TIMBER DEVELOPMENT ASSOCIATION

On March 1 the Timber Development Association moved their headquarters to 21, College Hill, London, E.C.4, the entrance to which is shown in the centre of this illustration by Denis Flanders. Included in the change of address are the T.D.A. London Regional Office and the Timber Centre Ltd. The telephone number is City 4771.



# THE PRINCIPLES OF STRUCTURAL WELDING

No. 1.—By Rolt Hammond, A.C.G.I., A.M.I.C.E.

## Historical Note.

**W**ELDING takes many forms, the earliest being forge welding, in which two pieces of iron are heated in a blacksmith's forge and hammered together on the anvil whilst in a plastic condition. In the late nineteenth century, water-gas welding was introduced in which the flame provided by water-gas took the place of the blacksmith's hearth.

The first real advance towards modern welding was the introduction of the oxy-acetylene process, which owed its origin to the discovery of acetylene by Edmund Davy in 1836. In 1874 Werdermann suggested that a type of electrical blowpipe could be devised in which the flame gases of an electrical arc could be blown or displaced by a jet of air. In 1881 de Meritens in the course of some experimental work was faced with the problem of joining together certain parts of electrical storage batteries; he put the work-piece on a support, connected it with the positive pole of a source of current and thus maintained an electrical arc. The other pole was a carbon rod directed by the operator's hand so that it first made contact with the work-piece and was then removed from it to strike the arc. The metallic lead of the battery plate was thus fused and the parts united. This first arc-welding process was very similar to the familiar lead burning now employed by plumbers and builders.

Between 1883 and 1885 Elihu Thomson developed an experimental machine for electric welding, and in 1886 he took out the first patent for electric arc-welding. Bernardos, a Russian, succeeded in welding cast iron, wrought iron and steel by the electric arc. He used a single carbon rod, the arc being maintained between this rod and the part to be welded. In 1891 a method of making calcium carbide on a commercial scale was introduced by Willson and Moisson. Their work was followed three years later by that of Le Chatelier, who discovered that acetylene and oxygen burned together to give a very hot flame. Not until the beginning of the present century, however, did these and other efforts of many scientists and experimental workers begin to show commercial results.

In 1901 the oxy-acetylene flame was first used for welding materials together, and although at the time only an experiment, it was so successful that it was soon employed on a commercial scale. In 1902 the discovery by Carle Linde of a method of liquefying air and of producing nitrogen and oxygen was perfected, which had a tremendous effect on the development of the oxy-acetylene process.

In 1903 Bouchayer introduced a patented electric spot welding machine employing two transformers, each on a different side of the work. A patent was taken out by Harmatta in 1912 for using copper electrodes in this technique; one which is very suitable for assembling small metal parts and sheet metal components, and which has been greatly developed in recent years for the welding of aluminium and other non-ferrous metals.

This series of articles deals briefly with some of the many aspects of structural welding, as applied to contemporary building.

*The use of welding in building is still, relatively speaking, in the experimental stage in this country. This may be due partly to a certain element of distrust on the part of some architects.*

*However, the last war provided an opportunity for considerable advances in welding both for shipbuilding and tank construction and many of the lessons learnt are now being put to good use in the building field.*

*There are two essentials for welded design: first that buildings should be designed from the start with the method of construction in mind and second the employment of fully trained operators under good supervision.*

*In this series of articles the author explains in simple terms various methods and application of welding as applied to building.*

## EQUIPMENT

### Oxy-acetylene welding.

The oxy-acetylene flame is used for both welding and metal cutting. The apparatus necessary for a portable welding outfit suitable for building and constructional work, includes the acetylene and oxygen cylinders. These can be mounted side by side on a two-wheeled trolley for easy handling to the working position. The oxygen cylinder will have a pressure of about 2,000 lb. per sq. in. and a gas storage capacity of about 220 cubic feet.

Every fall of 100 lb. per sq. in. in pressure represents a discharge of 11 cubic feet of gas from the cylinder. It is important to stress that all welding gases should be supplied by specialist manufacturers, because if oxygen is accidentally stored in a cylinder previously used for other gases there may be a considerable explosion.

Into the outer casing of the cylinders are screwed hollow steel plugs. The hollows are filled with an alloy melting at about 120 degrees centigrade. If this temperature is exceeded, the molten alloy will run out of the holes allowing the gas to escape and ignite instead of exploding. Operators should be familiar with the position of these holes and should take care that they are not in a position where they can become overheated. There should be no grease or oil in or on any part of the oxygen system. Any cylinder with a defective valve system should be returned to the suppliers for repair. Empty or idle cylinders must not be left with valves open.

All cylinders should be used in the vertical position. If this is not done in the case of an acetylene cylinder some of the acetone may be extracted and may burn at the nozzle; thus wasting valuable

material and possibly affecting the quality of the weld. Wear and tear caused by moving cylinders can be reduced by using sets of cylinders known as manifolds. These are coupled together but each connection is provided with a high pressure valve to stop flow from any of the cylinders as required. Such manifolds are commonly used for heavy continuous welding. In the case of both oxygen and acetylene, the manifolds should be bought from makers and should certainly not be fitted by the user. Experience proves that at least enough acetylene cylinders should be used in a manifold to give a maximum discharge rate for each of not above 20 per cent of its capacity in cubic feet per hour. Today pressure regulators can be obtained which indicate both gas pressure in the container and the volume of gas remaining.

There is a very wide range of welding torches and blowpipes available. In every case the torch is made so that the volume of acetylene equals the volume of oxygen delivered by way of the torch.

Different sizes of nozzles are used according to the different thicknesses of materials to be welded. Generally speaking, the thicker the metal the larger the flame, but variation in size of nozzle and in type of flame will also involve variation in gas pressures, the latter ranging from 2 to 15 lb. per sq. in. Nozzles must be kept clean, with copper wire of slightly less diameter than the hole to be cleared. Hard material may damage the passage through the nozzle.

## APPLICATION

Oxy-acetylene welding can be employed on cast iron, steel, brass, copper, aluminium, and other ferrous and non-ferrous metals. Although the first cost of the equipment used is rather less than for electric arc welding, in certain other respects it is probably slightly more expensive than the arc welding method, although cost of operation is low. Bad welds can generally be traced to a number of causes, such as faulty equipment; welding rods of unsuitable composition; lack of care in instructing the operator; failure to inspect the welded joint, or bad maintenance of the plant. A major cause of faulty joints is unsuitable metal.

In oxy-acetylene welding, the first essential is to control the flame according to the material to be welded. Thus, for nickel and nickel alloys the flame should be of slightly reducing type, with a small excess of acetylene; for aluminium and its alloys, the flame should be neutral or slightly reducing. The acetylene must be pure; dissolved acetylene being the best type of gas for such work. The process can also be used successfully for welding aluminium castings, a problem which may sometimes confront the builder. It must be remembered that the mass of a casting is more liable to crack (owing to stresses and strains set up by heating to welding temperature), than are sheets and plates. Particular care is needed when repairing complicated castings. They must be pre-heated slowly and evenly in a furnace so as to minimize stress arising from unequal heat distribution.

(To be continued)

## It started 158 years ago



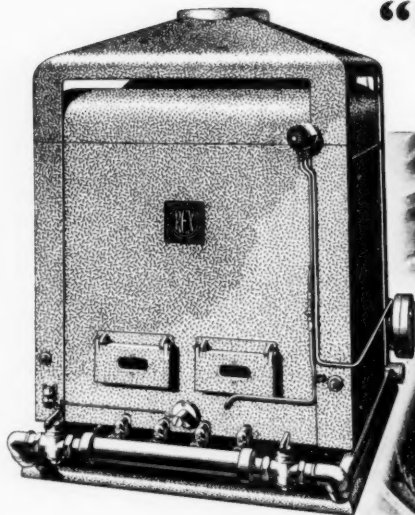
This excavator shovel, the smallest Newton Chambers make, has a capacity of over a ton. Its toughened steel teeth are designed to dig rapidly into rock and stone, yet in spite of its size and strength, and the immense driving power behind it, the shovel can be made to work with almost the flexibility of the

human hand. It was 158 years ago that men first dug with hand shovels at Thorncliffe — for coal and ironstone upon which Newton Chambers' industries were founded. Today, giant mechanical diggers are among the many products made by a seventh generation of Thorncliffe foundrymen and engineers.

## Newton Chambers

& COMPANY LIMITED, THORNCLIFFE, Nr. SHEFFIELD

IRONFOUNDERS · ENGINEERS · CHEMICAL MANUFACTURERS

**Recommendation for specification****"MADE BY DE LA RUE"****Potterton Boilers****at the White City**

*Aerial view of  
White City Stadium, London.  
White City Stadium Photo.*

Throughout White City Stadium there are installed a total of 32 POTTERTON Gas Fired Boilers, meeting the different hot water requirements of the Dressing Rooms, Tote Booths, Restaurant, Kitchen, Stores, Wine Cellar, Engineer's Room and Offices. For large establishments such as this, where hot water is required over a wide area for a variety of purposes, POTTERTON Gas Fired Boilers score by their flexibility. Hot water can be supplied—at the right temperature—wherever it is wanted, without the use of extensive pipework with its consequent heat losses. No central boiler house is necessary and the need for a costly chimney stack is avoided; there is no fuel storage problem—and no stoking.

The POTTERTON range of gas boilers and equipment covers all normal commercial and industrial applications, and our advisory service is available at all times to advise on the out-of-the-ordinary installations. May we send you literature?

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Imperial House, 84-86 Regent Street, London, W.1.

Northern Area: 4 Albert Square, Manchester 2.

Midlands Area: Portobello Works, Warwick.

## INTEREST (continued from page 295)

**THE PLANT HIRE RATES COMMITTEE** of the M.O.W. has prepared a third edition of the Schedule of Rates for Net Cost and similar items for use in conjunction with the recently issued Control of Rates of Hire of Plant Order.

The Schedule supersedes the original Schedule and all subsequent amendments. It has no statutory authority, but is recommended by the Committee for use with the Order.

Copies of the Schedule of Clause 1 (b) Rates can be obtained free on application to:—The Secretary (AS.72), Ministry of Works, Lambeth Bridge House, London, S.E.1. Copies of the Order itself (SI.1950 No. 2060) can be obtained from H.M. Stationery Office, price 2d. each.

**LOADING**, chapter V of the Code of Functional Requirements of Buildings is issued for comment again by the Council for Codes of Practice, as important changes have been made in the loading recommendations. These changes affect (a) Dead Load: Provision for partitions not shown on building plans. (b) Imposed Loads (other than wind loads): Classification of floors for loading purposes. Loading of corridors, stairs and landings. Permissible reduction of total imposed floor loads on columns in multi-storey buildings. Imposed roof loads. (c) Wind Loads: Wind loads on walls, roofs, wall panels, wall and roof sheeting and fastenings. General stability calculations for the effects of wind on a building as a whole.

The chapter is in draft form and subject to amendment in the light of comments, which should be submitted by March 23, 1951. Copies of the draft chapter may be obtained from the British Standards Institution, 24/28, Victoria Street, London, S.W.1, price 4s. post free, proof reference CP(B) 990.

**FIRST MODELS** of a continuous concrete mixer imported from Germany were demonstrated recently in the London area. These mixers, of which there are four models, produce volume batched concrete and have automatic water and cement feed control. The two models likely to be of most interest to builders are priced at £350 and £500.

**TRAVEL FACILITIES** announced by shipping, rail and air organizations of interest to overseas buyers visiting the 1951 British Industries Fair, to be held in London and Birmingham from April 30 to May 11, include: reduced fares on certain Scandinavian sea routes; reduced charges on British railways under the Travel Unit Scheme (1,000 miles or more); reduced off-season rates for trans-Atlantic travelling by B.O.A.C.; two-way daily air service between London and Birmingham; special trains from Euston to Birmingham section of the Fair.

"CAREERS IN BUILDING", the Ministry of Works exhibition will be on display at the new Hereford College of Further Education, Newtown Road, from March 16-22. The Ministry's "Modern Building" exhibition, comprising exhibits of Modern Site Organization, Domestic Plumbing, Codes of Practice, and Thermal Insulation will also be shown.

## CORRESPONDENCE

## FIREBACK DESIGN

Sir,

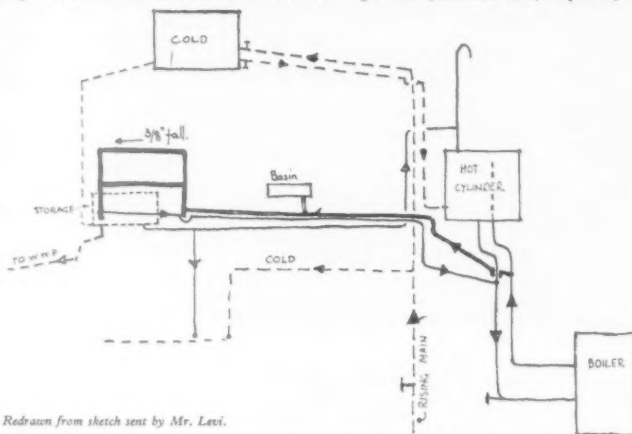
Mr. Barker's revision works well in practice. I have used a similar form for years. Its only drawback—common to all "smoke-shelf" types—is its proclivity for dry powdery soot to puff out in periods when no fire is needed. The old "register grate" had some advantages. We now crudely stuff up the throat with newspaper.

It might be mentioned that it is important that the throat, vertically over the fire, should have an area equal to the flue; e.g., flue 8 in. x 8 in. = 64 in. Throat-slit 4 in. x 16 in. = 64 in.

Yours,  
Edwin Gunn

Dear Sir,

I take *The Architect* each week and read with interest the "Good Bad or Indifferent" article, and this has led me to write and enquire whether the writer of that article



Redrawn from sketch sent by Mr. Levi.

could help me with a plumbing problem I have in my own house.

Recently I had all the old plumbing service renewed in copper and a heated towel rail fitted in the bath-room, but although the water in the taps gets too hot to touch by hand the towel rail remains cold. On many occasions the top valve has been opened and the water flows immediately and there is no suggestion of air lock; there is a  $\frac{1}{2}$  in. fall away from the release valve and the connections are to the two primaries.

I enclose a sketch of the system and would be most grateful if you could obtain any suggestion to enable the towel rail to be effective.

Yours faithfully,  
Harold E. Levi.

A. Foreman's Reply to letter from Mr. Harold E. Levi.

It is difficult to be sure that one is giving the right advice on a problem involving pipe runs without seeing the system or without having very complete drawings of it and, particularly without knowing the pipe sizes. But it looks like an old problem. It seems from the sketch and from your correspondent's statement "and the connections are to the primaries" that the flow and return from the boiler to and from the towel rail are branches from the main flow and return pipes from the

boiler to the hot water storage tank. That is to say it is a separate circuit, and a flat one at that. Water as it heats will automatically go up the straight flow pipe to the highest point and will by-pass any branches, such as that to the towel rail, almost completely unless checked on the way.

I have assumed there is an air cock on the towel rail to release any air which may have collected and that a "pitcher tee" has been used and not a "square tee" at the junction of the towel rail circuit with the main flow pipe. There are several possible remedies depending on the exact lay-out of the pipes and their sizes. The essential factor is to provide some check to the flow so that it is in part diverted to the towel rail circuit, and this might be achieved by any of the following methods:

1. The insertion of a "Regulating tee" in the flow pipe above the branch to the towel rail.
2. If the flow pipe size will permit without restricting unduly the flow to the branches serving the bath, basin and sink, the piece of

flow pipe between the branch to the towel rail and the storage tank might be replaced by a pipe of  $\frac{1}{2}$  in. smaller diameter.

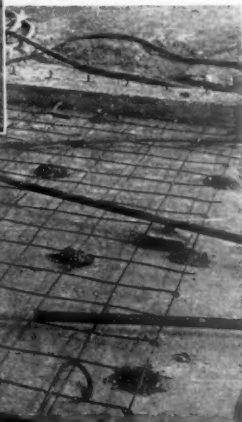
3. A second and separate flow pipe from the other side of the boiler might be used to serve the tank leaving the present flow pipe stopped off at the branch to the towel rail.

The best remedy would be to form a single circuit from above the top of the storage tank (from the expansion pipe) off which the towel rail and the branches to the fittings are taken and to return this circuit back into the tank. Even with such a layout or any other in which the towel rail is likely to be the high point of a circuit there will be some air accumulation which will have to be released periodically.

I have an idea that the separate circulation (shown in the sketch) to feed the towel rail was provided so that it could be cut off or it would remain cold when the water in the storage tank is heated by an immersion heater. If, therefore, the system is altered to provide a complete circulation as suggested, the pipes forming the actual circuit should be lagged and a control valve should be installed to cut off the towel rail, as this and the pipes disperse a great deal of heat.

Personally, I think that when radiators are to be installed (and towel rails are radiators), it is better to have an indirect system so that there is a primary circuit heating the indirect cylinder and the radiators and a secondary circulation with draw-offs to serve the fittings.

## PRESTRESSED CONCRETE ROAD at CRAWLEY NEW TOWN



Provided that the cost can be made comparable with normal construction costs, the use of prestressed concrete in road construction shows that it can have the following advantages: (a) elimination of cracks, (b) reduction of number of expansion joints, (c) following from (a) and (b) improvements in riding quality and reduction of maintenance costs.

The disadvantages are: (a) the difficulty of reinforcement which limits the probable use of prestressed concrete roads to non-urban areas, and (b) the possible complication of expansion joints if the bays are very long.

The main features of this experimental design were: (a) Length of slab. The present trend in concrete road construction is to limit the number of expansion joints, a maximum length of 400 feet was therefore decided upon as suitable in view of the uncertainty as to the value of frictional restraint.

(b) Stress. For reasons of economy it was desired to limit the prestress to the smallest value consistent with the subgrade restraint expected. It was finally decided that the coefficient of friction would probably lie between 0.25 (0.23 estimated for Orly runway) and 0.50 (estimated by the Road Research Laboratory). The effect of this assumption is that for a length of 400 feet of road, assuming the ends of the road to move relative to the centre, the subgrade restraint will represent a decrease in prestress of between 50 and 100 lb. per sq. in.

Therefore by using a prestress of 200 lb. per sq. in. a residual prestress would remain of at least 100 lb. per sq. in. So that, though local cracking may take place owing to external stresses, removal of load or stress would be followed by the closure of the cracks.

(c) Production of stress. Freyssinet type cables were used, consisting of twelve 0.2 in. diameter high tensile steel wires grouped round a 16-gauge mild steel wire core helix. The cables were aligned at an angle of 3 to 1 to the line of the road in diamond pattern at approximately 7 ft. 6 in. centres. At each end of the

400 feet bay the cables were curved to anchorages in the side haunch in order to avoid having anchorages in the carriageway at the ends of the slab.

(d) Depth of slab. In order to accommodate the  $1\frac{1}{2}$  in. diameter cables, which have to cross at different levels in the slab, it was impossible to reduce the depth of slab below 6 in. and obtain reasonable cover. The depth was thus fixed at 6 in.

### CONSTRUCTION

(a) Sub-base. To reduce construction costs it was decided to use a sub-base of 4 in. clinker.

(b) Haunch and cable anchorage. The anchorage cones were fixed in concrete haunches constructed independently of the main slab, firstly to enable the cones to be embedded in high grade concrete, and secondly to facilitate the speedy construction of the main slab. The haunches were 12 in. wide and 6 in. deep running the full length of the road on each side of the carriageway. They were tied to the main slab with  $\frac{3}{4}$  in. diameter mild steel bars. The concrete mix used was 3.9: 1 by weight with a water cement ratio of 0.40.

(c) Placing of cables. Following the completion of the haunches the 12-wire Freyssinet cables were threaded through the sheathing consisting of 18 ft lengths of 16-gauge mild steel tubing. All joints in the sheathing were sealed by adhesive tape. For the curved cables, holes were preformed in the concrete by means of "Ductube" supported by the short length of fabric reinforcement at the ends of the slab. The cables were drawn through after concreting was completed in accordance with normal practice.

(d) Concreting of main slab. A central construction joint enabled the slab to be laid in four operations, the size of each days work being 200 ft. x 12 ft. 0 in.

(e) Stressing of slab. Stressing of the cables was carried out about 3 weeks after concreting the main slab. Four jacks were used, operated in pairs from two pumps. The elongation of each wire corresponded to a stress of 80 tons per sq. in., the minimum 0.1 per cent. proof stress of the wire being 82 tons per sq. in.

(f) Grouting up of cables and completion of haunch. On completion of the stressing the cables were injected with clean water under pressure and grouted up with neat cement. The anchorage cone recesses in the haunch at the side of the road were then concreted up.

(g) Expansion joints. In view of the difficulty of calculating the actual expansion of the 400 ft. long prestressed bay with an unknown subgrade restraint, it was decided to place a short expansion bay 5 ft. in length at each end. Each expansion bay consists of hardcore surfaced with tarmac, incorporating a 2 in. thickness of expansion jointing material. Following the precise measurement of the actual expansion, an expansion joint will be designed to fit.

The chief Engineer to Crawley Development Corporation was A. J. W. McIntosh B.Sc., M.I.C.E., M.I.Mech.E., and the Contractors were Willmott Bros. Limited.

Top left: haunches.

Above: curved cables and Ductubes.

Below: a general view showing sheathing for straight cables.



Notes below give basic data of contracts open under locality and authority which are in bold type. References indicate: (a) type of work, (b) address for application. Where no town is stated in the

## CONTRACT • NEWS •

address it is the same as the locality given in the heading, (c) deposit, (d) last date for application, (e) last date and time for submission of tenders. Full details of contracts marked \* are given in the advertisement section.

### OPEN

#### BUILDING

**BEBINGTON B.C.** (a) Block of 6 shops and 6 flats, block of 2 lock-up shops and a block of 26 lock-up garages, on Brackenwood Estate. (b) Borough Engineer, Brackenwood, Higher Bebington. (c) 2 Gns. (e) Mar. 27.

**BOLTON B.C.** (a) Primary school at Johnson Fold. (b) Borough Engineer, Town Hall. (c) Mar. 17.

**BRADFELD R.C.** (a) 18 dwellings at Blossom Lane, Theale. (b) Council's Clerk, Town Hall Chambers, Blagrove Street, Reading. (c) 2 Gns. (e) Mar. 17.

**BRIDGNORTH R.C.** (a) 34 houses at Alveley. (b) Messrs. Henry Vale & Sons, 21 Waterloo Road, Wolverhampton. (c) 3 Gns. (d) Mar. 17.

**CHAPEL-EN-LE-FRITH R.C.** (a) 20 houses on Cote Lane site, Hayfield. (b) Engineer and Surveyor, 27 Market Street, Chapel-en-le-Frith, via Stockport. (e) Mar. 17.

**CORBY U.C.** (a) 4 two-storey blocks of flats adapted in part for use as offices, and a block of 10 garages. (b) Council's Clerk, Council Offices. (c) 3 Gns. (e) Mar. 16.

**COVENTRY C.C.** (a) Alterations and adaptations to "Gulson Library." (b) City Librarian, Cow Lane. (c) 2 Gns. (d) Mar. 14. (e) Apr. 11.

**DEPWADE R.C.** (a) 4 houses at Bressingham, 2 pairs at Bunwell, pair of bungalows at Carleton, 1 pair at Denton, pair of houses and a pair of bungalows at Tibenham. (b) Messrs. A. F. Scott & Sons, 23 Tombland, Norwich. (c) £3. (e) Mar. 16.

**DURHAM C.C.** (a) Adaptations to Wynyard Hall Training College, near Wolviston. (b) County Architect, Court Lane. (c) Apr. 2.

**EAST RIDING C.C.** (a) Alterations to Derwent Hill, Stamford Bridge, to form residential home. (b) Messrs. Needham, Thorp & White, 6 High Petergate, York. (c) 2 Gns. (e) Mar. 16.

**FAILSWORTH U.C.** (a) 12 houses on Bardsley Fold Estate, Lord Lane. (b) Engineer and Surveyor, Town Hall, Oldham Road. (c) 2 Gns. (e) Mar. 17.

**FAILSWORTH U.C.** (a) Public conveniences at Broadway. (b) Engineer and Surveyor, Town Hall, Oldham Road. (c) 2 Gns. (e) Mar. 17.

**GAINSBOROUGH U.C.** (a) 40 houses, with site works, on White's Wood Lane site. (b) Messrs. Wm. Saunders & Partners, 24 Castle Gate, Newark-on-Trent. (c) 3 Gns. (e) Mar. 22.

**IPSWICH B.C.** (a) New classrooms, assembly hall, cloakrooms, etc., at Luther Road Primary and Infants' School. (b) Messrs. Johns & Slater, 32 Foundation Street. (c) 2 Gns. (d) Mar. 12. (e) Apr. 6.

**ISLE OF ELY C.C.** (a) House and farm buildings at Speedwell Farm, Waldersea. (b) County Architect, County Hall, March. (c) 2 Gns. (d) Mar. 12. (e) Apr. 23.

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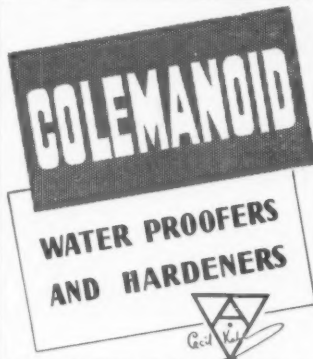
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**KING'S LYNN B.C.** (a) 6 pairs of houses on North Lynn Estate. (b) F. R. Barton, 23 New Conduit Street. (c) 2 Gns. (e) Mar. 16.

**LITHERLAND U.C.** (a) Structural steelwork for 15 shops and 30 flats proposed at Kirkstone Road North. (b) Messrs. Quiggin & Gee, 11 Old Hall Street, Liverpool, 3. (c) 2 Gns. (e) Mar. 19.

**LIVERPOOL C.C.** (a) 96 flats at Speke. (b) City Architect, Blackburn Chambers, Dale Street, Kingsway. (c) 2 Gns. (e) Mar. 22.

**LONDON—EALING B.C.** (a) Public convenience at Haven Green, W.5. (b) Borough Engineer, Town Hall, W.5. (c) £2. (e) Mar. 19.

**LONDON—EAST HAM B.C.** (a) Block of 7 flats and 7 maisonettes on Barking Road site, contract No. 42. (b) Chief Housing Officer, Town Hall, E.6. (c) 2 Gns. (d) Mar. 14.

**MANCHESTER C.C.** (a) Public convenience at Hollyhedge Road, Wythenshawe. (b) City Architect, Town Hall. (c) 1 Gn. (e) Mar. 13.

**MIDDLESEX C.C.** (a) Conversion of The Grange, Gresham Road, Staines, into a mother and baby clinic. (b) Council's Clerk, Middlesex Guildhall, S.W.1. (c) 2 Gns. (d) Mar. 12. (e) Apr. 2.

**MITCHAM B.C.** (a) 59 Maisonettes and flats and 32 houses on Section 2 of Ravensbury Estate. (b) Borough Engineer, Town Hall. (d) Mar. 12. (e) Apr. 4.

**NEATH B.C.** (a) 50 houses on Cimla No. 2 site. (b) Borough Engineer, Gwyn Hall. (c) 3 Gns. (e) Mar. 17.

**NEWARK-ON-TRENT B.C.** (a) 200 houses on Hawton Road Estate. (b) Borough Surveyor, Municipal Buildings. (c) 3 Gns. (e) Mar. 28.

**NEW ZEALAND—DEPT. OF WORKS (HOUSING DIVISION).** (a) Design, supply and erection of 1,000 prefabricated houses and outbuildings in New Zealand. (b) High Commissioner for New Zealand, 415 Strand, W.C.2. (e) June 20.

**N. IRELAND—BELFAST.** (a) Erection of babies' home at Nazareth Lodge, for St. Patrick's Orphan Society. (b) W. H. M'Evly, Ulster Bank Chambers, 73 May Street. (c) 10 Gns. (e) Mar. 19.

**N. IRELAND—DOWN E.A.** (a) Primary school at Killeel. (b) V. B. Evans, 3 Bradbury Place, Belfast. (c) £5. (e) Mar. 21.

**N. IRELAND—TYRONE COUNTY HEALTH COMMITTEE.** (a) Maternity and child welfare clinic at Thomas Street, Dungannon. (b) Messrs. McCarthy & Lilburn, Scottish Provident Buildings, Belfast. (c) 5 Gns. (e) Mar. 19.

**PADIHAM U.C.** (a) 16 bungalows on St. Giles' Street Estate. (b) Surveyor and Engineer, Town Hall. (c) 2 Gns. (e) Apr. 6.

**PORTSMOUTH C.C.** (a) 16 flats at Lion Terrace. (b) City Architect, Municipal Offices, 1 Western Parade. (c) 2 Gns. (d) Mar. 12.

**READING B.C.** (a) Erection of superstructure of Reading Technical College. (b) Messrs. Lancaster & Lodge, 10 Woburn Square, London, W.C.1. (d) Mar. 13.

**SALFORD C.C.** (a) Alterations and additions to public library at King Street, Irlams-o'-th'-Height. (b) City Engineer, Town Hall. (c) 2 Gns. (e) Mar. 29.

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**SALTASH B.C.** (a) Block of 4 shops and 4 flats and 15 lock-up garages in three blocks on Warraton site. (b) Borough Surveyor, Church House. (c) 2 Gns. (e) Mar. 26.

**SCOTLAND—GIRVAN B.C.** (a) 20 houses. (b) Town Clerk, Town Clerk's Chambers, Separate trades.

**SCOTLAND—HAWICK B.C.** (a) 6 houses at Gladstone Street. (b) Burgh Surveyor, Hawick. (e) Mar. 10. All or separate trades.

**SCOTLAND—HAWICK AND DISTRICT EVENTIDE HOMES LTD.** (a) Alteration and reconstruction of Weens Mansion House, near Bonchester, Roxburghshire. (b) Messrs. J. P. Alison & Hobbirk, 45 Bridge Street, Hawick. (e) Mar. 21. Separate trades.

**\*ESSEX RIVERS CATCHMENT BOARD.** (a) Office, Garages and Stores at Lexden, Colchester, and Carpenter's Shop, Stores and Garages at Rettendon, near Battlesbridge. (b) Board's Engineer, Essex Rivers House, Springfield Road, Chelmsford. (e) Mar. 31. See page 35.

**SEATON VALLEY U.C.** (a) 20 houses and 26 houses on site near Seghill Station. (b) Council's Surveyor, Council Offices, Seaton Delaval. (e) Mar. 13.

**SLOUGH B.C.** (a) 37 two-storey blocks of flats at Priory Estate, Burnham. (b) Borough Engineer, Town Hall. (c) 2 Gns. (e) Mar. 26.

**SOUTH CAMBRIDGESHIRE R.C.** (a) 26 dwellings on Sawston site. (b) Council's Architect, County Hall, Hobson Street, Cambridge. (c) 2 Gns. (e) Mar. 23.

**SOUTH KESTIVEN R.C.** (a) 4 houses at Edenham, 10 houses at Horbling, 2 at Irnham, 6 at Uffington, 4 at Swinstead, 2 at Sunbly, 6 at Pointon and 2 at Castle Bytham. (b) Council's Architect, Council Offices, 41 North Street, Bourne, Lincs. (c) 2 Gns. (e) Mar. 28.

**SOUTHPORT B.C.** (a) Public conveniences at Victoria Park. (b) Borough Architect, Pavilion Buildings, Lord Street. (e) Mar. 16.

**SOUTHEND-ON-SEA B.C.** (a) Crematorium, etc. (b) Borough Engineer, Municipal Buildings. (c) £2. (e) Apr. 2.

**THORNEY R.C.** (a) 2 pairs of houses, for aged persons. (b) Messrs. Ward & Woolnough, 8 South Brink, Wisbech, Cambs., immediately.

**WREXHAM B.C.** (a) 24 houses and 8 flats at Barons Road. (b) Borough Engineer, 31 Chester Street. (c) 2 Gns. (e) Mar. 26.

## PLACED

Notes on contracts placed state locality and authority in bold type with (1) type of work, (2) site, (3) name of contractor and address, (4) amount of tender or estimate. † denotes that work may not start pending final acceptance, or obtaining of licence, or modification of tenders, etc.

## BUILDING

**\*BIRMINGHAM.** (1) R.C. School. (2) King's Heath. (3) W. G. Whittall & Sons Ltd., 132 Lancaster Street, Birmingham. (4) £102,281.

**GLASGOW.** (1) First stage of extensions to Royal Technical College. (3) Thaw & Campbell Ltd., 136 Paton Street, Glasgow, E.1. (4) £445,000. Architects: Wylie, Shanks & Wylie, 120 Blythswood Street, Glasgow, C.2.



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**GRIMSBY CORPORATION.** (1) Schools. (2) Chelmsford Avenue; Carr Lane (second phase); Yarborough (fourth phase). (3) F. A. Would Ltd., 251 Grimsby Road, Cleethorpes, Grimsby. (4) £130,124, £39,168 and £38,311.

**MANCHESTER CORPORATION.** (1) Poundwick primary school. (3) W. J. Simms, Sons & Cooke Ltd., Manchester and Nottingham.

**NORTH-EAST.** (1) Factories, for Lemington Glass Works Co., Ltd. and Kirk Co. (2) Newburn, near Newcastle-on-Tyne, and West Auckland. (3) Holland & Hannen and Cubitts Ltd., Howden, Wallsend.

**PLYMOUTH.** (1) Out-patients' department. (2) Mount Gold Hospital. (3) Wakeham Bros. Ltd., Knighton Road, Plymouth. (4) £34,950.

**PLYMOUTH CORPORATION.** (1) Johnson Terrace School. (2) Devonport. (3) F. J. Stanbury Ltd., Plymouth. (4) £54,203.

**POOLE CORPORATION.** (1) Oakdale primary school. (3) Burt & Vick Ltd., 63 Market Street, Poole, Dorset. (4) £76,448.

**SOUTHWARK, S.E.** (1) Reconstruction of Southwark Cathedral. (3) Higgs & Hill Ltd., South Lambeth Bridge Road, S.W.8. (4) About £500,000. Architect: Romily Craze, of Milner & Craze, 3 Buckingham Gate, S.W.1.

**TOTTENHAM B.C.** (1) 60 dwellings. (2) Tewkesbury development area. (3) Hubert C. Leach Ltd., 261 High Street, Waltham Cross. (4) £89,865.

**WOLVERHAMPTON CORPORATION.** (1) Second stage of secondary school. (2) Northcote. (3) A. M. Griffiths & Son Ltd., Thomas Street, Wolverhampton. (4) £58,847.



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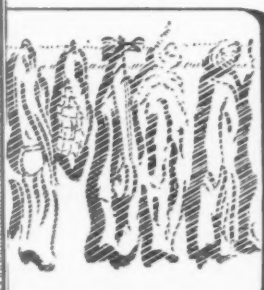
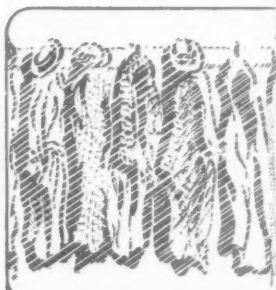
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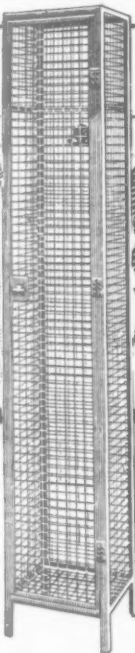
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THOUGH the recognised indexes of industrial production for January will not appear for a good many weeks yet, it is already clear that over a wide range of industry output since the turn of the year has increased significantly for the winter.

In the meantime, it has been reported that the demand for coal has increased by 10 per cent since the end of the year. This is a very serious situation, particularly as the demand for gas and electricity has also increased.

**EVERYONE** is being asked to save coal, gas and electricity and the efforts of the nation must not be wasted in the factories.

In every factory fuel must be used to the greatest effect and economies made wherever possible.

Your extra care will help to keep industry working.

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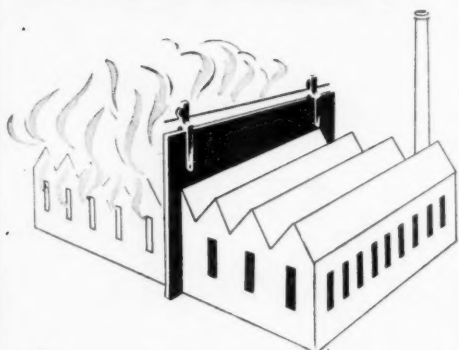
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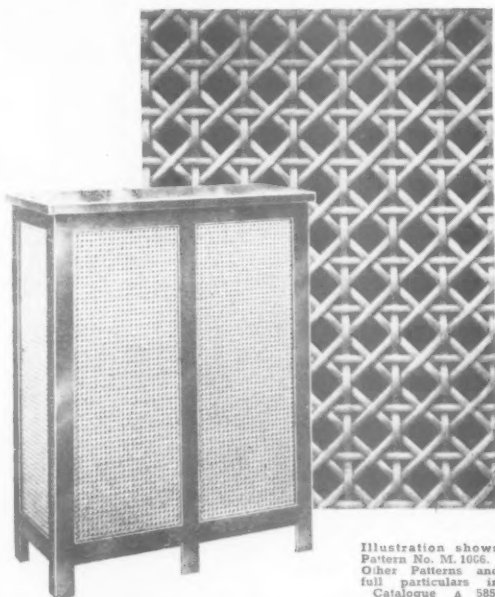


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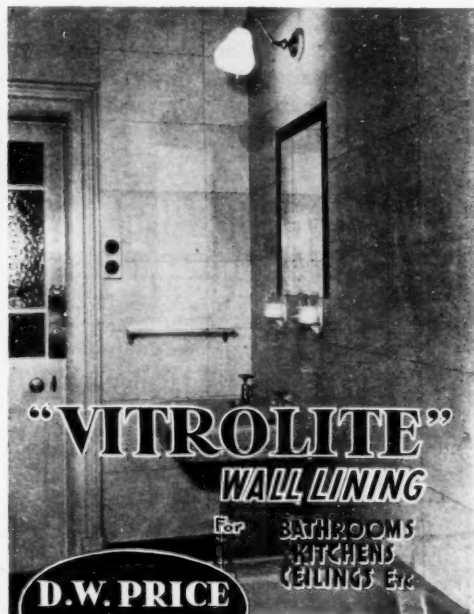
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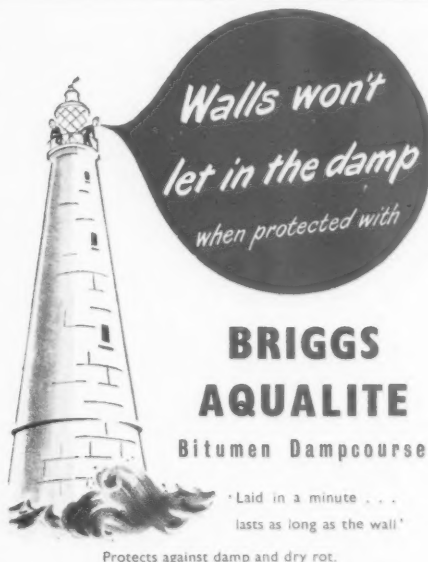
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## **APPOINTMENTS**

### **LONDON COUNTY COUNCIL.**

**A**PPPLICATIONS are invited for positions of **ARCHITECTURAL ASSISTANT** (salaries up to £580 a year) in the Housing and Valuation Department. Commencing salaries will be determined according to qualifications and experience. Engagement will be subject to the Local Government Superannuation Act, and successful candidates will be eligible for consideration for appointment to the permanent staff on the occurrence of vacancies.

Successful candidates will be required to assist in the design, layout and preparation of working drawings for housing schemes (cottages and multi-storey flats) and will be employed in the Housing Architect's Division.

Forms of application may be obtained from the Director of Housing, The County Hall, Westminster Bridge, S.E.1 (stamped addressed envelope required and quote reference A.A.1). Canvassing disqualifies. (816) [0101]

### **BOROUGH OF WILLESDEN.**

#### **APPOINTMENT OF ARCHITECTURAL ASSISTANT.**

**T**HE Council invite applications for the appointment of an **ARCHITECTURAL ASSISTANT** on the Permanent Staff of the Borough Engineer and Surveyor's Department.

The salary attaching to the post will be Administrative, Professional and Technical Grade VI of the National Whitley Council's Scale for the London Area, namely £595 per annum rising by two annual increments of £20 per annum and one of £25 per annum to £660 per annum, plus London Weighting of £30 per annum.

Candidates must be Associates of the Royal Institute of British Architects or hold an equivalent qualification, and preferably have general knowledge and experience of architectural work in the service of a local authority.

The appointment will be terminable by one month's notice on either side, is subject to the provisions of the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

Applications, giving age, experience, etc., accompanied by copies of not more than three testimonials, should be addressed to the undersigned, endorsed "Architectural Assistant," not later than 10 a.m. on Monday, the 19th March, 1951.

It will be necessary for the successful candidate to provide his own housing accommodation, as the Council is not in a position to assist.

Canvassing, either directly or indirectly, will be deemed a disqualification.

(Signed) R. S. FORSTER, Town Clerk.

Dyne Road, Kilburn, N.W.6.  
 7th February, 1951. [5265]

**AIR MINISTRY** have vacancies for **DESIGNER/DRAUGHTSMEN** in the Design Branch of the Works Department in the following fields: Architecture, Drainage and Water Supply, Land Survey. Vacancies are mainly in London but there are some in the provinces. If desired, consideration would be given to making appointments for London only. Salaries are on ranges up to £625 with starting pay in accordance with age and qualifications. Applications, stating age, qualifications, previous appointments (with dates), should be sent to Air Ministry (S.2.H), Cornwall House, London, S.E.1, from which address further details may also be obtained. [5275]

### **COUNTY BOROUGH OF CARLISLE.**

#### **CITY ENGINEER'S DEPARTMENT.**

**A**PPPLICATIONS are invited for the appointment of an **ASSISTANT QUANTITY SURVEYOR**, Grade A.P.T. VI (£595-£660).

Applicants for the appointment should be Corporate Members of the Royal Institution of Chartered Surveyors (Quantities Division) and should have experience in the preparation of Bills of Quantities, Estimates, measuring up and settlement of Final Accounts.

Housing accommodation will be provided for the successful applicant, if required.

Forms of application and conditions of employment may be obtained from the City Engineer, 18 Fisher Street, Carlisle, to whom all applications should be returned not later than Saturday, 17th March, 1951.

H. D. A. ROBERTSON, Town Clerk.  
 The Town Clerk's Office,  
 15 Fisher Street, Carlisle. [5271]

### **BOROUGH OF BEDDINGTON AND WALLINGTON.**

#### **BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.**

##### **ARCHITECTURAL ASSISTANT.**

**A**PPPLICATIONS invited for above appointment. Preference will be given to persons holding appropriate qualifications. Salary A.P.T. IV (£480-£15-£525) plus London Weighting.

If necessary, housing accommodation will be provided.

Forms of application obtainable from undersigned. Closing date Saturday, 17th March, 1951.

A. B. BAITEMAN, Town Clerk.  
 Town Hall, Wallington, Surrey.  
 1st March, 1951. [5278]

**IMPERIAL CHEMICAL INDUSTRIES LIMITED.**  
 General Chemicals Division. Applications are invited for the following positions in the Architectural Section of the Chief Engineer's Department, Runcorn. Good salaries and prospects of promotion are offered to applicants with suitable qualifications and experience. Appointment carries membership of the Staff Pension Fund.

**ASSISTANT ARCHITECTS**—Ref. E/58.  
 Applicants should have had good general experience in design and the preparation of working drawings, and should preferably have passed the Final examination of the R.I.B.A.

**QUANTITY SURVEYOR**—Ref. E/59.  
 Applicants should be experienced in the writing of specifications, the working up and preparation of bills of quantities for industrial type buildings, offices and amenity buildings, and be capable of preparing cost estimates, issuing inquiries and placing orders for specialist sub-contracts.

Applications, stating age, qualifications and experience, should be addressed to the Staff Manager, Imperial Chemical Industries Ltd., General Chemicals Division, Cunard Building, Liverpool, 3.  
 20th February, 1951. [5270]

### **COUNTY BOROUGH OF GREAT YARMOUTH.**

#### **EDUCATION COMMITTEE.**

##### **APPOINTMENT OF TWO CLERKS OF WORKS.**

**A**PPPLICATIONS are invited for the appointment of two **CLERKS OF WORKS** to supervise the erection of the new Secondary Technical School and the erection of the "Beccles Road" Secondary Modern Girls' School.

The appointments will be temporary for approximately 2½ years in the case of the first and 2 years in the case of the second, and subject to one month's notice on either side.

The salary will be £12 0s. 6d. per week. Applicants must have a thorough knowledge of the building trade, including experience in connection with steel framed buildings, they must be conversant with plans, specifications, bills of quantities, and competent to set out work, give levels and keep all necessary records and progress reports.

Applications, stating age, qualifications, present employment and previous experience, accompanied by copies of three testimonials, should be enclosed in an envelope, endorsed "Clerk of Works, Schools," and must be received by me not later than Monday, 26th March.

Canvassing, directly or indirectly, will be deemed a disqualification, and candidates must disclose in writing whether, to their knowledge, they are related to any member, or holder of any senior office under the Council. Candidates who fail to do so will be disqualified, and if appointed will be liable to dismissal without notice.

D. J. FARROW, Chief Education Officer.  
 22nd February, 1951. [5279]

### **CROWN AGENTS FOR THE COLONIES.**

**A**RGUMENTAL ASSISTANT required by the Government of Kenya for the Public Works Department for one tour of four years in the first instance. Commencing salary according to age and experience in the scale of £670 rising to £840 a year. Outfit allowance £30. Gratuity on satisfactory completion of service. Free passages. Liberal leave on full salary. Candidates not over 40 years of age, should have a good general education and sound knowledge of building construction and should be accurate draughtsmen with good experience in an architect's office. Apply at once by letter, stating age, full name in block letters, and full particulars of qualifications and experience and mentioning this paper, to the Crown Agents for the Colonies, 4 Millbank, London, S.W.1, quoting M. 27156 A. on both letter and envelope. The Crown Agents cannot undertake to acknowledge all applications and will communicate only with applicants selected for further consideration. [5291]

### **CITY AND COUNTY OF BRISTOL.**

#### **CITY ARCHITECT'S DEPARTMENT.**

##### **APPOINTMENT OF DEPUTY SECTION HEAD GRADE IX.**

(£750 x 50 - £900 per annum).  
**A**PPPLICATIONS are invited from qualified Architects for the appointment of a **DEPUTY SECTION HEAD**.

Candidates must be Associate Members of the R.I.B.A., or hold equivalent qualifications, with considerable experience particularly in housing, and the control of a number of senior and junior architectural staff. Experience in Local Authority office work and attendance at Committees will be an advantage.

The salary offered is Grade IX (£750 x 50 to £900 per annum). The appointment is subject to the provisions of the Local Government Superannuation Acts, 1917 and 1939 and successful applicants required to pass medical examination. The appointment is terminable by one month's notice in writing on either side.

Housing accommodation provided, if necessary, at an economic rent.

Applications stating age, full details of training, qualifications and experience, present appointment and period held and salary, together with the names of three referees, must be delivered to the undersigned by Monday, 19th March, 1951.

J. NELSON MEREDITH, F.R.I.B.A.,  
 City Architect.

Eagle House, Colston Avenue,  
 Bristol, 1.

27 February, 1951. [5287]

### **WEST SUSSEX COUNTY COUNCIL.**

#### **COUNTY ARCHITECT'S DEPARTMENT.**

**A**PPPLICATIONS are invited for the appointment of an **ASSISTANT ARCHITECT** as a salary in accordance with Grade IV A.P.T. Division (£480 to £525 per annum) of the National Scales of Salaries. Further particulars should be obtained from the County Architect, County Hall, Chichester, to whom detailed applications must be submitted not later than the 21st March, 1951.

T. C. HAYWARD,  
 Clerk of the County Council.  
 County Hall, Chichester.  
 28th February, 1951. [5288]

### **CWMBRAN DEVELOPMENT CORPORATION (MONMOUTHSHIRE).**

#### **APPOINTMENT OF TWO JUNIOR ASSISTANT ARCHITECTS.**

**A**PPPLICATIONS are invited for the above appointments in the Department of the Chief Architect (Mr. J. C. P. West, A.R.I.B.A., A.M.T.P.).

Candidates should be Graduate Architects or have completed satisfactory period of professional training, and the salary for the posts will be within the range £425 to £550 per annum.

Applications, stating age, qualifications and experience, present employment and salary, together with the names of two referees, must be received by the General Manager by the 27th March, 1951. Town Hall (Corn Street Entrance), Newport, Mon. [5290]

## PEMBROKESHIRE COUNTY COUNCIL.

## APPOINTMENT OF ASSISTANT LANDS AND BUILDINGS SURVEYOR.

APPLICATIONS are invited for the appointment of an ASSISTANT LANDS AND BUILDINGS SURVEYOR at a salary in accordance with Grade III A.P. & T. Division (i.e. £450 per annum rising by annual increments of £15 per annum to a maximum of £495 per annum).

Candidates should possess a good general knowledge of Drawing Office routine, be capable of tracing working drawings and be competent to undertake surveys and levels. A knowledge of routine and procedure in connection with Acquisition of Lands etc., will be an advantage.

The appointment is subject to the provisions of the National Conditions of Service for Local Government Administrative, etc., officers, to the provisions of the Local Government Superannuation Act, 1937, and to the passing of a medical examination, and would be terminable by one month's notice.

Canvassing in any form will disqualify.

Application forms can be obtained from the County Architect, County Offices, Haverfordwest, and should be completed and returned not later than fourteen days of the appearance of this advertisement to:

H. LOUIS UNDERWOOD,  
Clerk of the County Council,  
County Offices, Haverfordwest.  
26th February, 1951. [5284]

## STEVENAGE DEVELOPMENT CORPORATION.

APPLICATIONS are invited for the post of ASSISTANT CHIEF ARCHITECT (Grade II) at a salary of £1,000-£1,200 per annum in the Department of Architecture and Planning (Chief Architect and Planner, Clifford Holliday, M.Arch., F.R.I.B.A., M.T.P.I.).

The successful candidate will be responsible for the control of a large drawing office staff. It is essential that applicants should have ability in contemporary design and considerable experience of large-scale building works, contract management and be able to co-ordinate the work of groups of architects.

(a) The successful applicant will be required to contribute to a Local Government Superannuation Fund of an Assurance Scheme.

(b) The Corporation anticipates that, if so desired, it will be able in the near future to offer a successful married candidate the tenancy of a Corporation house.

(c) Canvassing, directly or indirectly, of members of the staff or of the Corporation will disqualify.

Applications should be made in writing by 21st March, 1951, to the Chief Administrative Officer, Stevenage Development Corporation, Aston House, Aston, Nr. Stevenage, Herts, stating age, professional qualifications, full details of experience and works carried out, appointments held, present salary and the names of three persons to whom reference may be made. [5295]

## METROPOLITAN BOROUGH OF PADDINGTON.

## HOUSING DEPARTMENT: ARCHITECTURAL SECTION.

## APPOINTMENT OF ASSISTANT ARCHITECT (II).

A.P.T. Va £550 x £20 - £610 p.a. plus London "Weighing".

APPLICATIONS are invited for the above appointment, which is subject to the National Joint Council's Service Conditions, the Council's Superannuation Acts, and to one month's notice on either side.

Candidates must be Registered Architects, preferably Associates of the Royal Institute of British Architects, and have had experience in Architectural Design and Construction of general municipal work, including multi-storey flats, or similar experience with private firms of architects.

Candidates must state age, qualifications, present and past appointments, with dates and salaries, experience, and names of three referees.

Applications must be received not later than noon on Thursday, 22nd March, 1951.

W. H. BENTLEY, Town Clerk,  
Town Hall, Paddington, W.2.  
8th March, 1951. [5299]

## METROPOLITAN BOROUGH OF LEWISHAM.

## APPOINTMENT OF SENIOR ASSISTANT ARCHITECT.

APPLICATIONS are invited for the appointment of SENIOR ASSISTANT ARCHITECT in the Borough Architect's Department at a salary within the scale A.P.T. Division, Grade VIII £685 x £25 - £760 per annum plus London "Weighing," age 26 and over £30 per annum.

Applicants must possess an approved University degree in architecture, or be Associates of the Royal Institute of British Architects with at least eight years' experience (excluding the period spent in theoretical training) or possess a University degree in architecture in addition to being Associates of the Royal Institute of British Architects, with at least seven years' experience (excluding the period spent in theoretical training). Preference will be given to candidates with wide housing experience including the design and construction of multi-storey flats.

The appointment will be subject to the Rules and Regulations of the Council from time to time in force relating to Officers; to the National Scheme of Conditions of Service; to the provisions of the Local Government Superannuation Act, 1937; to termination by one month's notice on either side and to the successful candidate passing satisfactorily a medical examination by the Council's Medical Officer of Health.

Forms of application may be obtained from the undersigned to whom they should be returned accompanied by copies of not more than three recent testimonials, in an envelope endorsed "Appointment of Senior Assistant" so as to be received not later than Saturday, the 31st March, 1951.

Canvassing either directly or indirectly will be a disqualification.

ALAN MILNER SMITH, Town Clerk,  
Lewisham Town Hall, Catford, S.E.6. [5298]

## CITY OF LEEDS.

## WORKS DEPARTMENT.

APPLICATIONS are invited for the appointment of ESTIMATING CLERK at a salary of £420-£465 per annum. Candidates must have had a considerable experience of Estimating and Costing preferably with a Local Authority, and/or Building Contractors. They should be capable of preparing, without supervision, estimates for works of minor alteration and adaptation. The appointment is subject to the provision of the Local Government Superannuation Act, 1937, and the successful applicant will be required to pass a medical examination. Applications should be forwarded in an envelope suitably endorsed to the undersigned not later than 12 noon on Saturday, 17th March, 1951. Canvassing in any form, either directly or indirectly, will be a disqualification.

H. R. HUDSON, L.R.I.B.A., M.R.San.I.

City of Leeds Works Department,  
Sweet Street, Leeds, 11. [5297]

## BUILDING INSPECTORS.

THE ROAD HAULAGE EXECUTIVE invite applications for positions as BUILDING INSPECTORS within the salary range £485/£630 per annum in the South Eastern Division (London). Applicants should be thoroughly experienced in the maintenance of all types of buildings and supervision of small alterations, able to draw up detailed specifications and supervise the execution of all classes of work, with simple drawings. They should also be fully qualified to price estimates and check builders' accounts. Full knowledge of procedure in obtaining licences, by-law approval and ability to write reports and deal with correspondence will be necessary.

Full details in chronological order should be given of past experience and positions held, with age, present salary and any qualifications possessed.

Applications should be sent to the Divisional Manager, (S.V.) South Eastern Division (Surveyor's Department), Road Haulage Executive, 150 Goswell Road, E.C.1, within 7 days of the appearance of this advertisement. [5296]

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W. J. S. BEW, Clerk.

Essex Rivers House,  
Springfield Road,  
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[5285]

## ARCHITECTURAL APPOINTMENTS VACANT

THE RAILWAY EXECUTIVE invite applications for posts of ASSISTANT ARCHITECT in London. Applicants should be A.R.I.B.A. or hold equivalent qualification and have had several years' experience in an Architect's office. Commencing salary £500-£550 per annum. Applicants selected may be required to join a Superannuation Fund in accordance with the rules of any such scheme.

Applications should give full particulars of qualifications, experience and age, and should be sent to Civil Engineer, The Railway Executive, London Midland Region, Euston Grove, London, N.W.1. [5244]

ARCHITECTURAL assistant required by Gollins Melvin & Partners, capable working drawings, salary £350-£550. Office experience essential. Five day week.—Telephone Museum 0883 for appointment. [5283]

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## SITUATIONS VACANT

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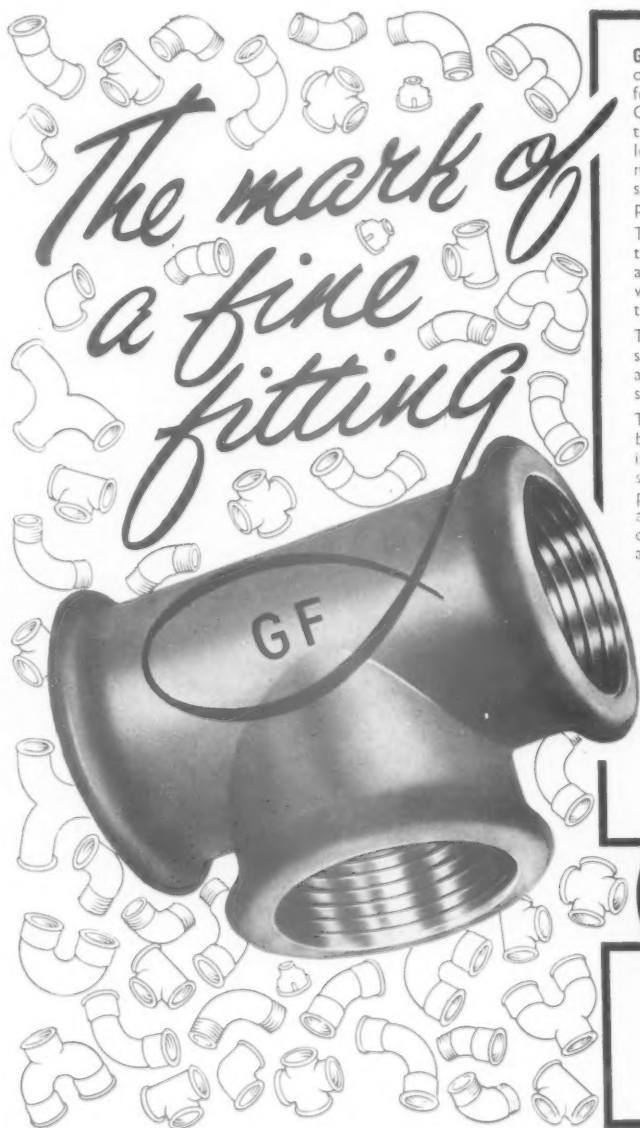
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